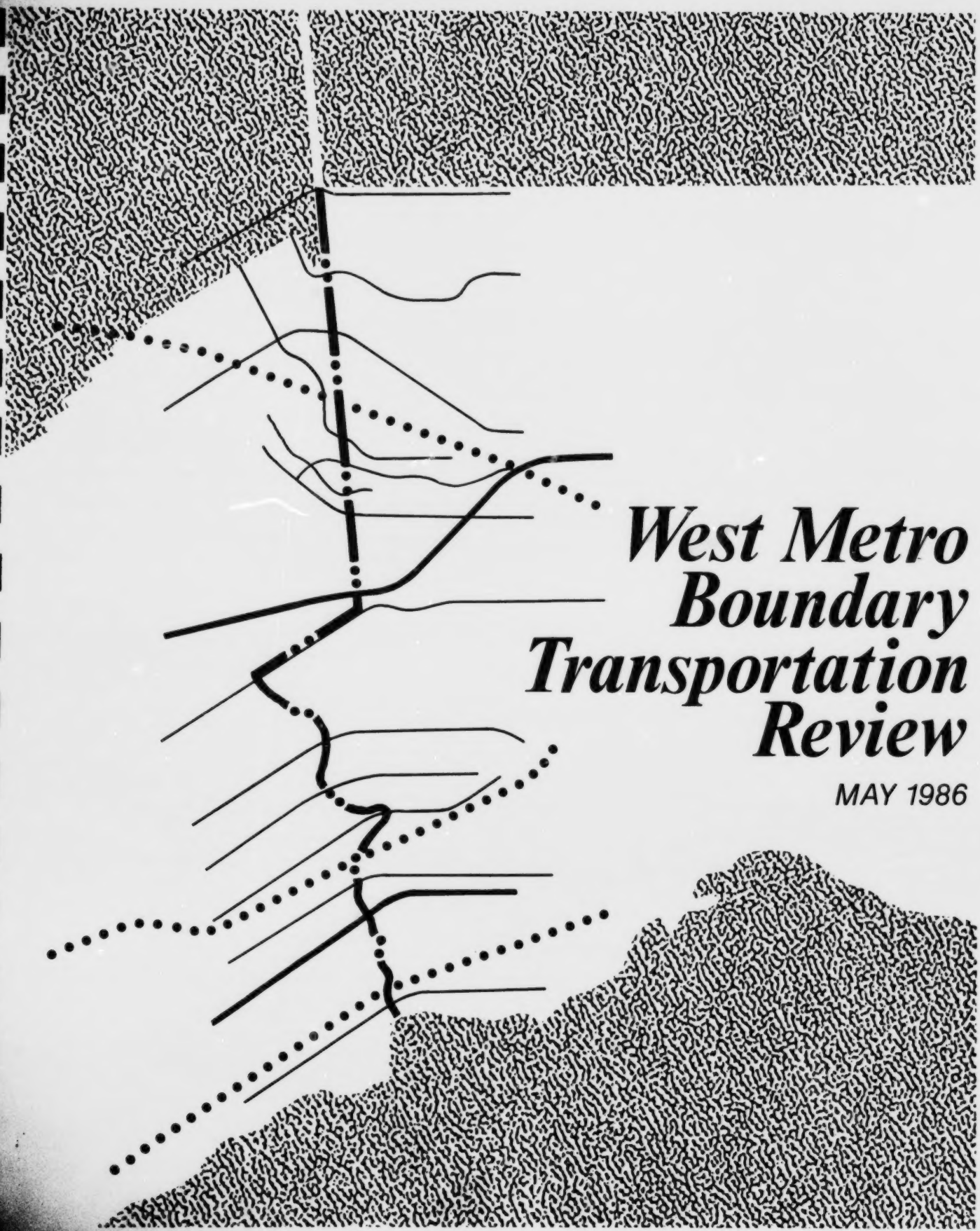

West Metro Boundary Transportation Review

MAY 1986

METROPOLITAN TORONTO PLANNING DEPARTMENT Transportation Division

WEST METRO BOUNDARY TRANSPORTATION REVIEW

Metropolitan Toronto Planning Department

Transportation Division

May, 1986

WEST METRO BOUNDARY TRANSPORTATION REVIEW

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EXECUTIVE SUMMARY

STUDY PURPOSE

The intention of this study has been to gain a better understanding of the extent and nature of the West Metro 'boundary problem', the magnitude of cross boundary travel demand growth and the nature and level of transportation improvements that will have to be considered.

Various alternatives that could increase transportation capacity across the boundary were explored and assessed in terms of their ability to cater to current and future travel patterns, with the intent of identifying improvements and additions to the transportation system which would best serve the increasing number of Metro-bound commuters.

The travel demand forecasts have been reviewed and the resultant performance of the various transportation initiatives considered in terms of their ability to accommodate future cross-boundary travel. The net result of the study has been the development of a proposed strategy that could deal with the growth in commuting over the coming years in a manner which matches supply and demand elements as closely as possible.

APPROACH

In reviewing transportation issues at the West Metro boundary, a straight forward approach has been adopted which identifies clearly the nature of the boundary problem so that solutions can be effectively directed. This was achieved by adopting the following procedure:

1. document recent travel growth and assess current deficiencies;
2. document alternative future land-use forecasts, and summarize differences;
3. document alternative travel demand forecasts, identify differences (and hence risk) and note similarities;
4. identify future road deficiencies, define the nature of the problem and hence potential transit markets;

5. review the merits of potential road and transit proposals/initiatives;
6. assess potential improvements in terms of which appear to best address the 'problem' as defined at step 4;
7. recommend a strategy that directly addresses the current and future pressures, while recognizing the risk involved in making recommendations for large capital investments.

The most important steps in this procedure are steps 3 and 4. In the past, much has been said about the intensification of the West Metro boundary problem. In steps 3 and 4, this study identifies the location of the present problem, where it will intensify most and, most importantly, the origin-destination patterns of future cross-boundary trips. This review has concentrated on identifying solutions that have the best chance of succeeding in accommodating the increase in commuting into Metro from the west.

PAST GROWTH

Between 1971 and 1981 the population of the Region of Peel nearly doubled from 260,000 to 491,000.

The Census of Canada journey-to-work data shows that between the census years of 1971 and 1981 the number of people travelling from Peel, Halton and Hamilton into Metropolitan Toronto for the purpose of work on a typical weekday had grown from 44,700 to 123,400 (a growth of 276%). However, cross-boundary travel in the morning peak period increased by only 4% between 1981 and 1985, indicating a considerable slowing of growth since the seventies. This recent slow growth is probably a direct result of the economic recession during 1982 and 1983.

The role of transit in serving trips across the west boundary has been slowly but steadily increasing. Commuter rail now carries 19% (compared to 11% in 1975) of the morning peak hour cross-boundary travel and bus services carry another 9%, with the remaining 72% of people using the automobile.

FUTURE TRAVEL DEMAND

Forecasting future travel depends largely on the forecasts of future population and employment and their distribution. Demographic forecasts prepared by various agencies for the Greater Toronto Area differ considerably. The main areas of difference are the forecasts of population, and particularly employment, for the Toronto Central Area (Planning District 1) and for the Region of Peel as a whole. As these forecasts are partly a reflection of municipal development goals, it is unlikely a concensus between the different municipal forecasters will be reached. This study has not attempted a rationalization of these forecasts but instead has focused on identifying the implications for West Metro boundary travel , indicating differences in travel forecasts and associated risk, and also identifying the similarities between forecasts. The forecasts for 2011 morning peak hour travel across the west boundary into Metro range between 80,000 and 110,000. A range this large has significant implications for the scale and timing of required improvements and whether a facility is required in the planning time frame at all. However, when comparing the distribution of travel across the boundary, the forecasts are remarkably similar, which gives more confidence in identifying trouble spots and the nature of the problem. For example the distribution of Metro work places for Mississauga residents is shown as follows:

	Toronto Central Area	Etobicoke	North York (N.of 401)	Scarborough	Rest of Metro
1981 (Actual)	32%	38%	8%	2%	20%
2011 (range of forecasts)	30-33%	35-38%	10-11%	2-3%	19-20%

The above tabulation shows that approximately 70% of commuters from Mississauga are presently destined to two main areas, namely Etobicoke (Peel residents occupy 25% of all jobs in Etobicoke) and the Toronto Central Area. Attention is directed towards Exhibits 3.7 and 3.8 of the main report for illustration of this data. The forecasts show little change in trip distribution between now and 2011 and, therefore, identified solutions will be relevant for both existing and future conditions.

CURRENT CAPACITY SITUATION

In general, roads at the boundary are operating increasingly nearer to capacity. Roads towards the southern end of the boundary, between Dundas and the Lakeshore, are the most congested and are considered to be operating at capacity in the morning peak. Transit services, particularly the three GO Rail services, (Lakeshore, Milton and Georgetown), have been successful in capturing a greater share of inter-regional travel at the boundary over the last 10 years. The Lakeshore line is currently operating near its peak period capacity, and existing residual peak period capacity on the Milton and Georgetown lines may be of limited value, since the peak-period-only service on these lines limits market potential. Regarding municipal transit services, Mississauga Transit currently operates approximately 68 buses in the peak hour (equivalent to a peak hour capacity of 4,000 passengers) across the boundary, with approximately 60 of these serving Islington Station directly. New and increased services could provide substantial additional capacity, as demand warrants. The Bloor subway is currently operating at about 75% of peak hour capacity at the peak point (west of St. George Station).

FUTURE CAPACITY DEFICIENCIES

In summary, concerning future roadway deficiencies and the nature of the problem, analysis carried out for this study led to the following conclusions:

1. Future travel demand will increase greatly on the roads crossing the boundary, and between Highway 401 and the Lakeshore in particular;

2. The roads between Dundas Street and the Lakeshore will not be able to accommodate even the low growth 2011 forecast for travel demand;

3. Roads between Bloor Street and Highway 401 would be able to accommodate the low growth forecast for travel demand, but not the high growth forecast;

4. Roads north of Highway 401 to Steeles Avenue are likely to be able to cope with the largest expected increase in travel demand with modest road and transit improvements;

5. Given that the roadways across the boundary south of Highway 401 will generally not be able to cope with the forecast travel demand, transit solutions will have to be initiated in lieu of increased road capacity, if the forecast demand is to be served;

6. Several cross-boundary arterials (e.g. Queensway, Eglinton) are not currently used to provide bus services into Metro. Current routes have the potential for more frequent service. There is, therefore, a significant potential bus capacity that is yet to be realized.

7. In order for new transit initiatives to be successful, they must be effectively directed at the major destination areas within Metro Toronto;

8. The main element of existing auto travel across the boundary is for commuters with destinations in Etobicoke, (40% to 50% of the total auto travel) and particularly the Rexdale and south Etobicoke employment areas. In other words, the largest portion of auto travel is relatively short distance trips;

9. Because of the north-south 'scatter' of destination areas for auto travel into Metro, a single new high capacity transit service, while providing a useful trunk facility which improves the transit grid, is unlikely to attract a major proportion of auto trips to transit. Instead, numerous bus services along the main arterials and possibly freeways, would provide a more direct penetration of the main destination areas. A similar argument can be made due to the 'scatter' at the origin end, as Mississauga is generally a low density suburban community;

10. The existing primary orientation of Mississauga Transit services to Kipling/Islington is expected to continue in the future, both to serve employment growth in the Kipling/Islington Centre and to provide access to the Bloor subway. These services, assuming future service and fare integration with the T.T.C., could effect a modal shift to transit for some destinations in Etobicoke and other employment areas.

11. The three GO Rail services will have an increasingly important role to play in serving the downtown destined commuter. Incremental service improvements to GO Rail will be needed as demand increases and could also serve some of the commuting into Etobicoke;

12. Other potential transit markets should be identified (e.g. Downsview, North York Civic Centre) and the potential to implement direct services investigated further;

13. Longer distance commuters (e.g. to Scarborough) tend to be more auto dependant. Destination areas, other than those mentioned, tend to be more dispersed and much more difficult to serve by transit.

REVIEW OF POTENTIAL IMPROVEMENTS

Roads

Road improvements that are felt to be most feasible in future years include:

Road Widenings

Queen Elizabeth Way (operational improvements) west of Etobicoke Creek;

The Queensway - west of Etobicoke Creek;

Dundas Street - west of Etobicoke Creek;

Eglinton Avenue - west of Highway 427;

Airport Road - west of American Drive;

Finch Avenue - both sides of boundary; and

Steeles Avenue - both sides of boundary.

New Link

Highway 407 (from Highway 10 to Highway 404)

The above list shows limited possibilities to relieve pressure on the most congested roadways towards the Lakeshore. The best opportunities for road improvement are toward the north of the boundary where there appears to be less pressure on the road system. South of Highway 401, potential new links such as the extensions of Rathburn Road, Sherway Drive and North Queen Street should be pursued by conducting feasibility studies. Construction of Highway 407 is seen as primarily benefiting Brampton and the Region of York, but preliminary analysis shows it would have a positive benefit for the West Metro boundary, between Highway 401 and Steeles Avenue, diverting traffic away from the boundary. Although not relieving the most congested sections of the boundary, any relief, for example to Highway 401, would allow some diversion from roads in the more congested south.

Transit

The following transit options which could encourage further shifts to transit usage for commuters into Metro from the west were examined:

1. GO Transit - Rail and Bus;
2. Municipal Transit - new and improved services;
3. Fare and Service Integration;
4. Eglinton West Rapid Transit (E.W.R.T.) line with extension to Mississauga City Centre;
5. Bloor Subway Extension; and
6. GO-ALRT Northern Section.

The current travel demand models in use by Metro Toronto and Regional Municipalities in the Greater Toronto Area are two mode models, the two modes being private automobile and municipal transit. A third mode, GO Transit, is not modelled explicitly, due to a lack of sufficient travel behaviour data. This means that there is a tendency to underestimate GO Transit ridership, particularly for inter-regional travel. As the current review of the West Metro boundary was essentially a review of inter-regional travel (GO Transit's natural role), further analysis of forecasts for municipal and GO Transit ridership was essential. The assignment of auto trips by the travel demand model is not constrained by road capacity, meaning it can forecast auto travel above what can be accommodated by the road system. This is not a concern, as the unconstrained assignment gives an excellent indication of where auto deficiencies are greatest and, therefore, where transit initiatives are required.

GO Transit

The Lakeshore West GO Rail line has an all-day, 7 day a week service. The other lines provide weekday rush hour services only, with 3 trains on the Milton line (2 to be added in 1988) and 4 on the Georgetown line. The result of analyses carried out in this study shows that future expansion of service on all three lines, particularly the Milton line, would be extremely beneficial in reducing auto demand across the boundary. A preliminary examination of demand indicates the Milton line has a great potential for

generating ridership which would eventually justify full service on the line, similar to that of the Lakeshore line. Incremental improvements in service on this line in particular, and the other two GO rail lines could reduce the foreseen need for any other downtown-destined rapid transit facilities from the west since a substantial amount of the ridership forecast for the Bloor subway would more likely use the improved commuter rail services.

There are currently three GO Bus services operating through Mississauga into Metro: Lakeshore into Toronto and, Milton/Meadowvale and Brampton/Malton, both into Yorkdale and York Mills. Incremental expansion of these services, with consideration of new GO Bus services targetted towards identifiable markets, will ease auto travel across the boundary.

Municipal Transit

Presently, the majority of Mississauga Transit bus services entering Metro feed the subway at Islington station. Operational testing of the proposed Mississauga busway, by means of express bus service between Mississauga City Centre and Kipling station via Highway 403/Eglinton Avenue and Highway 427 should be introduced on an interim basis, allowing assessment of the need for grade-separated rapid transit facilities (e.g. in the Eglinton corridor) in light of future GO Rail performance. The main element of auto travel across the boundary is for commuters with destinations in the major industrial areas of Rexdale and south Etobicoke which are either inadequately served, or not served at all by transit from the west. Direct service into these areas from Mississauga (and to a lesser extent from Brampton) combined with fare and service integration with T.T.C. services would greatly improve accessibility and hence the attractiveness of transit.

Fare and Service Integration

For many commuters from the west, journeying by transit into Metro may require several changes of service and also payment of as many as three separate fares. This is obviously not a situation that promotes the use of transit for commuting purposes. It is clear that a more equitable fare

structure together with a co-ordination of Municipal and Provincial transit services would encourage commuters to choose transit in favour of the auto.

Applications that could have a direct influence on commuting across the West Metro boundary are:

1. Fare Integration between GO Transit and T.T.C. at Union Station.

   A fare concession to access the subway for GO passengers could fill up empty seats on the subway in the off-peak direction, both morning and evening. Depending on the fare compensation arrangement agreed to, additional T.T.C. revenues may be generated without any additional service requirements or operating costs. This arrangement would have the appeal of attracting to GO Rail passengers that do not have a downtown core destination, but do have a destination within easy reach of the subway system.

2. Fare and Service Integration in Etobicoke between GO Transit, Mississauga and Brampton Transit and the T.T.C.

   Although not without problems in its execution, this initiative could have the greatest impact in encouraging a greater shift to transit usage in inter-regional travel. It could mean a requirement for more frequent bus and streetcar services in Etobicoke which would obviously benefit residents of Metro, and Etobicoke in particular. The overall cost and benefit implications to the T.T.C. are not clear, and obviously have to be taken into account in negotiations with the M.T.C.

Eglinton West Rapid Transit

The E.W.R.T. proposal, assuming an extension or connection to the proposed Mississauga busway, has been reviewed in this study only in terms

of its ability to accommodate cross-boundary travel and to relieve pressure on the road system at the boundary. It is recognized that this line has other merits (viz. in serving transit trips within Metro and in satisfying planning objectives), and these should also be addressed in the context of the Network 2011 strategy.

The analysis conducted for this study indicates that a single new rapid transit facility will not provide the most effective means of serving non-central destinations or effecting a significant modal shift to transit. The study has concluded that expanded GO Rail services to serve the Central Area, new and improved municipal transit services directed at specific transit markets, and transit service and fare integration among GO Transit, Mississauga Transit, and the T.T.C. to make optimum use of the existing grid transit system, as a package of improvements, could most effectively serve future cross-boundary travel needs. Assuming GO Transit will increase train frequency as demand arises, the Bloor subway likely would not reach capacity before 2001 and may not reach capacity before 2011.

Nevertheless, if commuter rail and surface transit improvements, including fare and service integration, are not implemented or are not successful in effecting a significant modal shift to transit, implementation of municipal rapid transit solutions such as the E.W.R.T. line would be required. In the meantime, the Mississauga busway facility could be implemented and connected to the Bloor subway which should have adequate capacity to accommodate the resultant additional ridership for some time to come. The timing of implementation of the E.W.R.T. should be reviewed both within the context of West Metro boundary travel monitoring and through the comprehensive five-year reviews recommended in the Network 2011 strategy.

Bloor Subway Extension

The advantages and disadvantages of extending the subway into the Sherway Gardens area or further west are presented in Section 5.6 of the

main body of this report. Extension to Sherway Gardens does not appear to have very much appeal in that it does not provide a 'new' service or increase capacity across the boundary and therefore is unlikely to ease auto travel across the boundary. This option should not be considered further. The alternative option of extending the Bloor subway into Mississauga, despite a higher capital cost, would provide additional cross-boundary capacity and alleviate road congestion in Etobicoke. The feasibility of this option is dependent largely on the extent to which improved GO Rail services divert longer distance trips from the Bloor line and should possibly be considered further as part of a future on-going review process for West Metro boundary travel.

GO-ALRT Northern Section

The preferred alignment for the long-range GO-ALRT Northern Section linked the Mississauga City Centre and Durham via the Highway 403 corridor, Highway 427 (or Highway 27), the Finch Hydro Corridor, Brimley Road or McCowan Road to the Scarborough City Centre and Highway 401 easterly. While a short-term need for this facility cannot be demonstrated, the long-term concept would provide useful connections between Mississauga and major employment concentrations in Metro Toronto and could provide a logical link between the proposed Mississauga busway and the proposed Sheppard rapid transit line. Accordingly, the concept should be included in future reviews of West Metro boundary travel.

CONCLUSIONS AND RECOMMENDED STRATEGY

Risk

The greatest risk involved in identifying long term solutions to facilitate future cross-boundary travel is in predicting the rate of growth and magnitude of travel demand and hence the scale and timing of required

improvements. Numerous forecasts for the year 2011, which differ by as much as 40%, have been made by different forecasters, and the implied timing and extent of required transportation investments vary accordingly.

In an uncertain environment, a commitment to major infrastructure in the near term to address a problem that may not arise entails considerable risk. It is felt, therefore, that a strategy aimed at responding to, rather than leading travel demand is appropriate. Having identified the nature of the demand across the boundary and the initiatives which best address the travel desires, a responsive approach would entail incremental application of improvements to roadways and transit services. This approach allows a process of monitoring, testing and review to be carried out without commitments to large amounts of capital investment until the need for implementation becomes more apparent. The recommended strategy to address commuting pressure across the West Metro boundary is described as follows:

Recommended Strategy to Address West Metro Boundary Commuter Travel

1. Implementation of incremental road improvements across the boundary as demand requires, but not in advance of need if transit initiatives are to be successful.

2. Encouragement to Peel and M.T.C. to improve the road system in Peel to divert trips from crossing the boundary (e.g. Highway 401/Airport connection, Highway 407), or to divert trips away from the southern part of the boundary to roads further north (e.g. improve north-south roadways within Mississauga).

3. Introduction of incremental and continuous improvements in western GO Rail services (particularly the Milton line) to serve the increasing travel demand for downtown destinations, including fare integration at Union Station to make the service more attractive for commuters with convenient access to the subway system beyond Union Station. Major capital investments should be reviewed in the context of alternative rapid transit opportunities.

4. Identification of transit markets for the implementation of additional GO and Municipal bus services (e.g. South Etobicoke, Airport, Rexdale, Downsview, North York, etc.).

5. Introduction of fare and service integration among GO Transit, the T.T.C., Mississauga Transit and Brampton Transit for cross boundary transit travel to arrive at a more equitable transit fare structure, improved grid of transit services and more direct routing, all of which would encourage a shift from auto to transit usage.

6. Protection of corridors for future rapid transit facilities including the E.W.R.T. and the Mississauga City Centre to Kipling Station busway connection, and operational testing of improved bus services to more accurately assess the potential demand and timing of implementation of such initiatives.

7. Initiation of an ongoing review process, including monitoring of population and employment growth, travel demand, (e.g. cordon counts, census surveys), assessment of the success of initiatives, fine tuning/modification, review of forecasts, etc. The results of this on-going review would be incorporated in the five-year review program proposed for the Network 2011 strategy.

The strategy described above is felt to be a responsible approach to the uncertainty of the future commuting situation. The approach is one that does not require large initial capital investment and, at the same time, contains specific proposals that have an excellent chance of coping with the increase in travel demand for many years to come.

It is important to note that this strategy is dependent on a commitment by the current and future Provincial Governments to improve GO Transit services and to co-ordinate the implementation of the fare and service integration initiatives described above. If this proves not to be the case, or if capital and operating costs become prohibitive, future reviews of West Metro boundary travel may conclude that the implementation of a new rapid transit facility is required.

1.0 INTRODUCTION

1.1 Background

Over the past fifteen years, high population and labour force growth in the Regions of Peel and Halton has resulted in substantial increases in peak period commuter travel crossing the West Metro boundary. Responses to that travel growth have included introduction of three GO Transit commuter rail lines, improvements to both the Queen Elizabeth Way and Highway 401 and, more recently, a host of studies examining specific elements of what has become known as "the cross-boundary problem". Recommendations for a comprehensive review of cross-boundary travel were made in the Metro/T.T.C. Rapid Transit Study, and approved by Metropolitan Council in mid-1983, and terms of reference and funding for such a study were approved in November, 1983. At the time, the West Metro Boundary Transportation Study was considered to be an integral component of the rapid transit studies, namely the Eglinton West Rapid Transit Study, the Downtown Rapid Transit Study, the GO-ALRT Northern Section Study (and the Sheppard/Finch Rapid Transit Corridor Study) which formed the basis for recommendations presented in "Network 2011: A Rapid Transit Plan for Metropolitan Toronto." During the past three years, emphasis was placed on completing the various rapid transit studies and, although certain portions of the West Metro Boundary Study were completed, limited staff and financial resources did not permit consolidation of the comprehensive review which had been authorized. That review has now been completed and is summarized in the following sections of this report.

1.2 Study Purpose

The intention of this study has been to gain a firm idea of the extent and nature of the 'boundary problem', the degree to which demand for commuting into Metro from the west is likely to grow and, consequently the nature and level of transportation improvements that will have to be considered.

It follows that this study has sought to identify improvements/additions to the transportation system which best serve the increasing number of Metro-bound commuters.

1.3 Approach

The approach taken in reviewing transportation issues at the West Metro boundary has been a "back to basics" look at the problem. This identified more clearly the nature of the boundary problem so that solutions could be more effectively directed. This was achieved by adopting a procedure outlined as follows:

1. document recent travel growth and assess current deficiencies;
2. document future land-use forecasts, point out differences;
3. document travel demand forecasts, point out differences (and hence risk) and note similarities;
4. identify future road deficiencies, define nature of problem and hence potential transit markets;
5. review merits of potential road and transit proposals/initiatives;
6. assess potential improvements in terms of which appear to best address the 'problem' as defined in step 4;
7. recommend a strategy that directly addresses the current and future pressures, while recognizing the risk involved in making recommendations for large capital investments.

The most important steps in this procedure are steps 3 and 4. In the past, much has been said about the West Metro boundary problem and its probable worsening. In steps 3 and 4, this study identifies the location of the present problem, where it will intensify most and, most importantly, the nature of the problem. This review has concentrated on identifying improvements that have the best chance of succeeding in accommodating the increase in commuting into Metro from the west.

Another important aspect of this study has been the identification of risk inherent in making an early commitment to capital intensive initiatives aimed at solving a long term problem. The travel demand forecasts by the Metro and Peel Planning Departments show a wide range and, hence, lead to differing conclusions regarding the magnitude and timing of the problem and initiatives required over the next 25 years. As no one forecasting agency has sure knowledge of how quickly future development will take place in different areas because of the inherent competitiveness of such development, it is difficult to rationalize the magnitude of the future problem. Instead, the implications to transportation initiatives across the boundary are discussed in respect of the higher and lower travel demand forecasts.

2.0 CROSS BOUNDARY TRAVEL CHARACTERISTICS AND PAST GROWTH

2.1 Development West of Metro: 1971 to 1981

During the 1970's, the Region of Peel experienced major population growth which kept it in the top three growth areas in the country. The population, centred primarily in Mississauga and secondly in Brampton, nearly doubled between 1971 and 1981 from 260,000 to 489,000. Exhibit 2.1 gives a comparison of population growth between 1971 and 1981 of Metropolitan Toronto and the surrounding regions.

It can be seen that Peel and Halton were contributing to a dramatic expansion of the Toronto urban area to the west. The Region of York to the north and Durham to the east of Metro, while experiencing substantial growth rates, did not exhibit as high an absolute growth.

From 1971 to 1981, employment in Peel more than doubled from 96,000 to 228,000. This constituted around 25% of the total employment increase in the Greater Toronto Area (G.T.A.) during this ten year period. Employment in Peel during this time did not keep pace with the resident labour force which increased from 108,000 in 1971, to 272,000 in 1981. Exhibit 2.2 gives a comparison of employment growth between 1971 and 1981 of Metropolitan Toronto and the surrounding regions.

2.2 Characteristics of Cross-Boundary Travel

2.2.1 Origin/Destination Patterns

Of the new labour force taking residence in Peel between 1971 and 1981, 58% found employment in Peel. The remaining 42% were residing in Peel and travelling elsewhere to work, primarily to Metro. People living outside Peel, meanwhile, were travelling into Peel to take 40% of the jobs (58% of

EXHIBIT 2.1

POPULATION GROWTH IN THE GREATER TORONTO AREA

	1971 Pop'n	% of G.T.A.	1981 Pop'n	% of G.T.A.	Population Change 1971-1981 No.	%	Percentage Share of Total Change
Durham	214,736	7.4	279,586	8.2	64,850	30.2	13.4
Halton	189,851	6.5	250,706	7.4	60,855	32.1	12.5
Metro Toronto	2,089,729	71.6	2,137,395	62.8	47,666	2.3	9.9
Peel	259,874	8.9	488,549	14.4	228,675	88.0	47.2
York	166,060	5.7	248,538	7.3	82,478	50.0	17.0
Greater Toronto Region	2,920,250	100.0	3,404,774	100.0	484,524	16.6	100.0

Source: Statistics Canada

EXHIBIT 2.2

EMPLOYMENT GROWTH IN THE GREATER TORONTO AREA

	1971 Emp.	% of G.T.A.	1981 Emp.	% of G.T.A.	Employment Change 1971-1981 No.	%	Percentage Share of Total Change
Durham	75,761	5.9	112,790	6.2	37,029	48.9	7.0
Halton	62,488	4.9	99,755	5.5	37,267	59.6	7.0
Metro Toronto	999,155	77.6	1,273,601	70.0	274,446	27.5	51.5
Peel	95,821	7.4	228,106	12.5	132,285	138.1	24.8
York	54,497	4.2	105,945	5.8	51,448	94.4	9.7
Greater Toronto Region	1,287,722	100.0	1,820,197	100.0	532,475	41.4	100.0

Source: Statistics Canada

these from Metro). It can be seen that there has been a continuing interaction between Metro and Peel during this period. The interaction increased at roughly the rate of growth in Peel. In other words, Peel residents depended on Metro for employment in 1981 to the same extent as they did in 1971 despite the growth in Peel employment. Commuting into Metro from the west stabilized following the 1981 economic recession, but started to grow again, albeit more slowly, after 1983 as the economy recovered.

Exhibit 2.3 gives an indication of the number and distribution of people travelling to work from Peel and Oakville to jobs in Metro in 1971 and 1981. Residents of Peel and Milton occupied nearly 10% of the Metro jobs in 1981 and 20% of all jobs in Etobicoke (see Exhibits 3.7 and 3.8). Conversely, Metro residents (nearly half of these from Etobicoke) take up 23% of the employment within Peel. In addition, in 1981 there were also 8,405 people travelling from Hamilton and Burlington to their work place in Metro, 50% of these to the Central Area.

In summary, the 1981 Census data shows that 123,375 people (a growth of 276% since 1971) were travelling from Peel, East Halton (i.e. Oakville and Milton) and Hamilton into Metro for the purpose of work and 63,140, a growth of 227% since 1971, were travelling from Metro to the west for the same purpose. This shows how the 'boundary problem' is primarily an eastbound problem. The focus of this study from this point, will therefore be on inbound movements. It follows that most suggestions for improving inbound travel will have a reciprocal benefit for outbound commuters.

2.3 Mode of Travel

Exhibit 2.4 indicates the trends in mode of travel for the inbound morning peak period from 1975 to 1985. Exhibit 2.5 illustrates the number of persons travelling by auto and transit over the same period.

EXHIBIT 2.3

24 HOUR HOME TO WORK LINKAGES (1971-1981)

FROM PEEL AND OAKVILLE TO METROPOLITAN TORONTO

	YONGE CORRIDOR (P.D.1,4)	ETOBICOKE (P.D.7-9)	WEST OF YONGE (P.D.2,3)	EAST OF YONGE (P.D.5,6)	NORTH YORK (N.OF Hwy.401) (P.D.10-12)	SCARBOROUGH (P.D.13-16)	METROPOLITAN TORONTO
1971	14,485 (33%)	18,485 (41%)	5,965 (13%)	1,765 (4%)	3,355 (8%)	640 (1%)	44,695 (100%)
1981	41,053 (36%)	41,008 (36%)	13,353 (11%)	3,429 (3%)	13,007 (11%)	3,120 (3%)	114,970 (100%)
1971-1981 increase	26,568 (38%)	22,523 (32%)	7,388 (11%)	1,664 (2%)	9,652 (14%)	2,480 (3%)	70,275 (100%)

Source: 1971 and 1981, Census of Canada

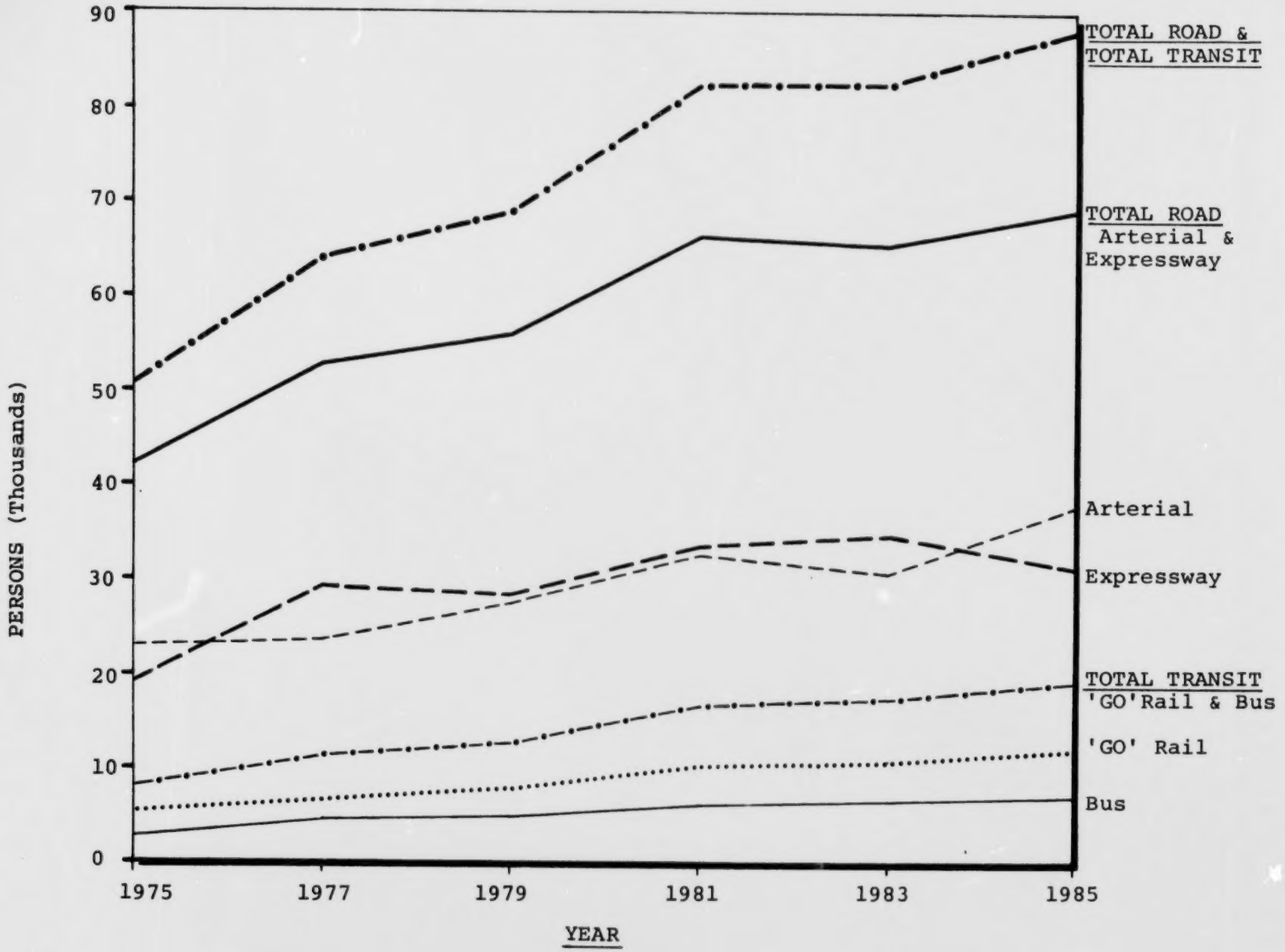
NOTE: Refer to Exhibit 3.1 for definition of P.D. (Planning District) zones.

EXHIBIT 2.4

PERCENTAGE MODAL SPLIT AT WEST METRO BOUNDARY
FROM 7:00 a.m. to 9:00 a.m.

		Auto & Taxi	Bus	Commuter Rail
	1975	83.6	5.6	10.8
	1977	82.3	7.3	10.4
	1979	81.2	7.3	11.5
	1981	79.8	7.7	12.5
	1983	78.7	8.2	13.2
	1985	77.7	8.2	14.1
(peak hour 7:15-8:15a.m. only)	1985	72.0	9.0	19.0

Source: Metro Cordon Count Program



Source:
Metro Cordon Count Program

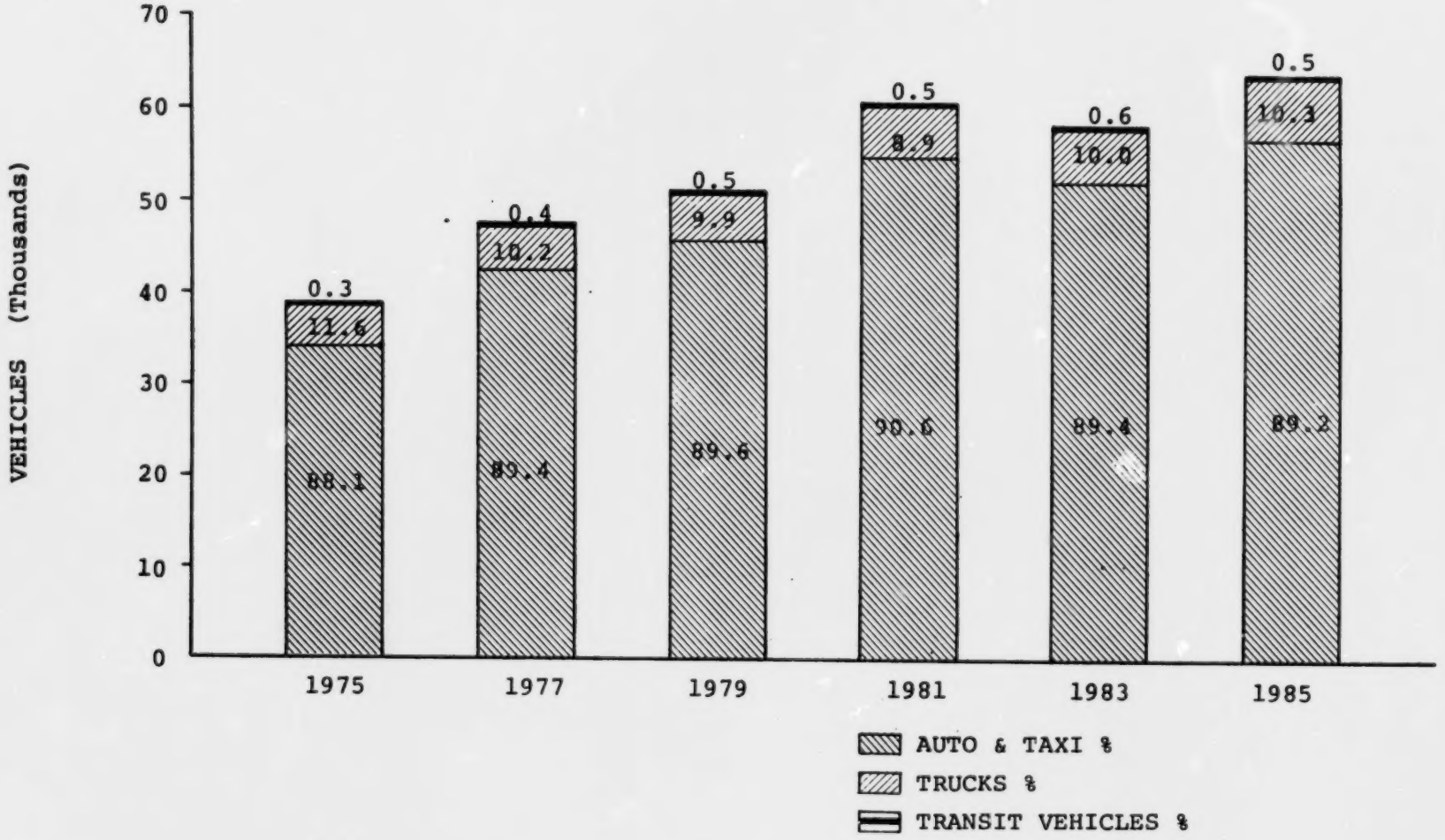
EXHIBIT 2.5

TRENDS IN PERSON TRIPS ACROSS THE WEST METRO BOUNDARY (Eastbound 7:00-9:00 AM)

Exhibit 2.4 indicates the growing role of transit since 1975 in serving the increasing number of Metro destined commuters from the west. As GO Rail offer excellent service to the Toronto Central Area, the estimated transit modal split of around 67% from Peel and Halton to this destination is much higher than for other destinations within Metro. It follows that transit modal split to destinations without such good transit links is much lower. For example, although there is roughly an equal propensity to travel to Etobicoke as to the Toronto Central Area, the transit modal split to Etobicoke jobs is estimated at around 5% from Peel and Halton.

2.3.1 Vehicular Travel

Exhibit 2.6 illustrates the growth in vehicular travel across the West Metro boundary between 1975 and 1985. The exhibit illustrates the strong growth in traffic during the 1970's, the subsequent decline after 1981 and the recovery since 1983. In 1975 there were 114 buses crossing the boundary during the morning peak period (7:00 a.m. to 9:00 a.m.). In 1985 this number increased to 325. The growth of truck traffic across the boundary has kept pace with the growth in auto traffic. There are large industrial areas on either side of the boundary (i.e. Rexdale, Long Branch, Airport, Malton), which means the boundary roadways are an important connection for industry in both Metro and Peel. Exhibit 2.7 shows the high truck volumes on particular links crossing the boundary. Note particularly the high truck proportions on roads north of (and including) Highway 401.



Source: Metro Cordon Count Program

EXHIBIT 2.6 VEHICLES CROSSING WEST METRO BOUNDARY 7:00 - 9:00 AM

EXHIBIT 2.7

1985 A.M. PEAK HOUR TRUCK VOLUMES

Metro Cordon Count Station	All Vehicles	Trucks	% Trucks
400 Lakeshore at Etobicoke Cr.	1857	100	5.4
401 Q.E.W. at Etobicoke Cr.	8191	361	4.4
402 Queensway at Etobicoke Cr.	2483	184	7.4
403 Dundas St. at Etobicoke Cr.	1342	215	16.0
Sub Total Screenline #1	13873	860	6.2
404 Bloor St. at Etobicoke Cr.	1624	90	5.5
405 Burnhamthorpe at Etobicoke Cr.	2295	128	5.6
406 Eglinton Ave. at Etobicoke Cr.	2026	195	9.6
407 Highway 401 W. of Renforth Dr.	7056	778	11.0
Sub Total Screenline #2	13001	1191	9.2
410 Airport Rd. W. of Highway 427	1428	224	15.7
412 Rexdale Blvd. W. of Highway 427	1652	295	17.9
413 Morningstar Dr. W. of Highway 427	520	65	12.5
414 Steeles Ave. W. of Highway 50	1053	149	14.2
415 Fasken Dr. W. of Highway 427	327	52	15.9
419 Disco Rd. W. of Highway 427	762	113	14.8
470 Highway 409 W. of Highway 427	926	271	29.3
471 Darcel/Finch W. of Highway 427	1687	125	7.5
Sub Total Screenline #3	8355	1294	15.5
TOTAL WEST METRO BOUNDARY	35229	3345	9.5

3.0 FUTURE TRAVEL DEMAND

3.1 Introduction

Forecasting future travel demand depends largely on estimates of the level and distribution of future population and employment. Improvements in the transportation system can effect the distribution of travel demand by improving access and hence the attractiveness of particular areas. Forecasts of population and employment in the Greater Toronto Area differ substantially among various agencies. In the case of future travel across the West Metro boundary, the future population and employment totals and their distribution within Metro and Peel are key determinants. Metro's demographic forecasts for the Greater Toronto Area differ from those of Peel, while the Ministry of Transportation and Communications has another set of forecasts. The two main areas of disagreement are: the rate of employment growth in the Toronto Central Area, and the rate of both population and employment growth in Peel and Halton.

The differences in the various demographic and travel demand forecasts are discussed in this section. However, as no-one has sure knowledge of the future, no attempt has been made to come up with new "rationalized" forecasts. Instead, the uncertainty of such forecasts and their implications to cross-boundary travel are pointed out.

Throughout this report, reference is made to a 26 district zone system as shown in Exhibit 3.1.

3.2 Review of Land Use Forecasts

Exhibits 3.2 and 3.3 show three 2011 forecasts for population and employment, respectively, for the Greater Toronto Area. The GO-ALRT "A" forecast was originally developed for the Toronto Area Liaison Committee (T.A.L.C.) and, as the name implies, was used in the various GO-ALRT studies as well as the Metro/T.T.C. Network 2011 study. It is

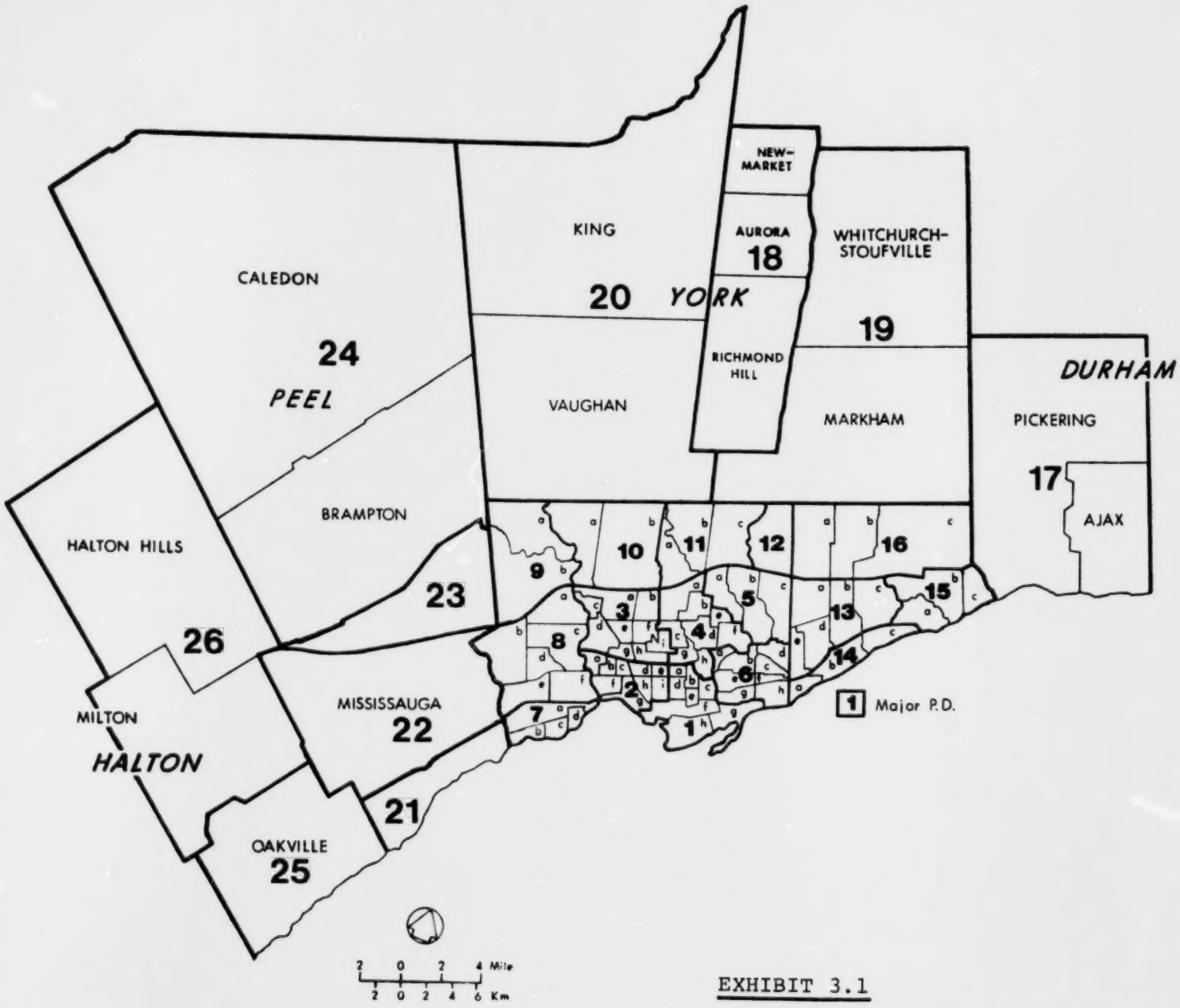


EXHIBIT 3.1

PLANNING DISTRICTS IN THE GREATER TORONTO AREA

PREPARED AND DRAWN BY METROPOLITAN TORONTO PLANNING DEPARTMENT

EXHIBIT 3.2

COMPARISON OF POPULATION SCENARIOS FOR THE YEAR 2011

	1984 (actual)	2011 GO-ALRT "A" (T.A.L.C.)	2011 PEEL (modified GO-ALRT "A")	2011 M1-85 (M.T.P.D.)
P.D.1	112,347(4%)	141,700(3%)	141,700(3%)	183,661(4%)
Metro	2,137,441(70%)	2,247,400(51%)	2,247,400(52%)	2,188,677(53%)
Peel	**490,731(16%)**	**1,119,998(25%)**	**1,078,050(25%)**	**1,035,086(25%)**
Oakville/ Milton	139,030(5%)	288,900(7%)	261,001(6%)	223,454(5%)
York Region	231,855(8%)	616,000(14%)	616,000(14%)	539,735(13%)
Ajax/Pickering	63,229(2%)	126,000(3%)	126,000(3%)	152,078(4%)
TOTAL	3,062,286(100%)	4,398,298(100%)	4,328,451(100%)	4,139,030(100%)

EXHIBIT 3.3

COMPARIS N OF EMPLOYMENT SCENARIOS FOR THE YEAR 2011

	1984 (actual)	2011 GO-ALRT "A" (T.A.L.C.)	2011 PEEL (modified GO-ALRT "A")	2011 M1-85 (M.T.P.D.)
P.D.1	361,843(23%)	458,300(19%)	445,600(17%)	470,721(21%)
Metro	1,145,612(73%)	1,502,075(61%)	1,500,900(59%)	1,433,080(63%)
Peel	**261,425(17%)**	**549,994(22%)**	**621,272(24%)**	**472,840(21%)**
Oakville/ Milton	46,400(3%)	91,800(4%)	104,333(4%)	86,300(4%)
York Region	101,700(6%)	271,000(11%)	271,550(11%)	227,700(10%)
Ajax/Pickering	21,510(2%)	51,300(2%)	51,300(2%)	41,400(2%)
TOTALS	1,576,647(100%)	2,466,169(100%)	2,549,355(100%)	2,261,380(100%)

basically an amalgamation of regional Official Plan targets and forecasts. It is generally considered to be, in aggregate, an optimistic projection of G.T.A. growth. The Peel forecast is a modification of the GO ALRT "A" land-use scenario developed for the Mississauga Transportation Study (M.T.S.). The Peel forecast indicates approximately 5.0% lower total population and about 13.1% more total employment in Peel and Oakville/Milton than does the GO-ALRT "A" forecast. These modifications were based on local aspirations and estimates of growth potential. Finally, the M1-85 forecast is the most recent regional demographic projection prepared by the Metropolitan Planning Department (Research Division). The M.T.P.D. forecast projects population and employment totals for Peel and Oakville/Milton approximately 10.7% and 13.9%, respectively, lower than the GO-ALRT "A" forecast. In addition, total employment in Metro is expected to be 4.6% lower than for the GO-ALRT "A" land-use. Perhaps most importantly, the M1-85 forecast indicates total employment in Peel and Oakville/Milton by 2011 about 22.9% lower than forecast by Peel.

The large range of the various land-use forecasts indicates the high degree of uncertainty in making long range forecasts. At this time, it is impossible to determine which, if any, forecast may be reliable or accurate. **The differences may, ultimately, be more a matter of timing of development rather than ultimate levels.** In any event, no attempt is made in this review to rationalize the forecasts or produce a "best" projection. Rather, the impact on future cross-boundary travel is examined in the context of the various land-use forecasts, and is described in the following section.

3.3 West Boundary Travel Forecasts

The previous section discussed the various land use forecasts used in recent studies. Travel forecasts also differ (distribution and modal split in particular) depending on the future transportation network used.

Throughout this report, reference is made to two different 2011 network scenarios. These are:

"Base Case" essentially a "no new rapid transit" network which assumes the same rapid transit network as exists today. The main differences between the existing network and this one is the assumed construction of Highway 407 between Highways 410 and 404, and a substantial increase in surface transit frequency and route density in Mississauga, which results in large increases in forecast modal split and total transit usage comared to existing conditions.

"System 3" same as "Base Case" with the addition of the Network 2011 rapid transit lines, i.e. Harbourfront/Spadina L.R.T. lines, Sheppard Avenue Subway, Downtown Relief Line and Eglinton West R.T. line extended to Mississauga City Centre (Square One). Also included are new rapid transit lines from Oakville and Brampton to Square One.

The 2011 "base case" estimates for a.m. peak hour person trips across the West Metro boundary range from 80,400 (Peel) to 107,200 (GO-ALRT 'A'). The new Metro forecast (M1-85) is 95,700. These figures represent a large difference in the estimate of future travel demand at the boundary. As mentioned earlier, this study will not attempt to rationalize these forecasts. In order to assess the significance of these differences, a comparison of the distribution of destinations within Metro was made. Exhibits 3.4 and 3.5 show a comparison of these three forecasts as well as the Network 2011 'System 3' forecast. These Exhibits reveal that despite the large differences in total travel from the west into Metro, the distribution of destinations within Metro is remarkably similar. A difference of 3% is the largest to be seen.

EXHIBIT 3.4

24 HOUR PERSON TRIPS FOR YEAR 2011
MISSISSAUGA TO METRO

Land Use Scenario	Toronto Central Area (P.D.1)	Etobicoke (P.D.7-9)	North York (North of Hwy. 401) (P.D.10-12)	Scarborough (P.D.13-16)	Rest of Metro (P.D.2-6)	All Metro (P.D.1-16)
GO-ALRT 'A' (Base Case)	37,307 (32%)	42,620 (36%)	12,167 (10%)	3,919 (3%)	21,813 (19%)	117,826 (100%)
GO-ALRT 'A (System 3)	36,629 (30%)	43,284 (36%)	13,295 (11%)	3,966 (3%)	24,130 (20%)	121,304 (100%)
Peel (Modified GO-ALRT 'A')	26,384 (30%)	32,691 (38%)	9,388 (11%)	1,992 (2%)	16,785 (19%)	87,240 (100%)
M1-85 (Base Case)	36,041 (33%)	37,581 (35%)	10,141 (10%)	3,641 (3%)	20,533 (19%)	107,937 (100%)
Range of % distribution	(30-33%)	(35-38%)	(10-11%)	(2-3%)	(19-20%)	

EXHIBIT 3.5

24 HOUR PERSON TRIPS FOR YEAR 2011
OAKVILLE TO METRO

GO-ALRT 'A' (Base Case)	10,644 (42%)	8,112 (32%)	1,876 (7%)	704 (3%)	4,161 (16%)	25,497 (100%)
GO-ALRT 'A' (System 3)	10,174 (39%)	8,441 (33%)	2,089 (8%)	684 (3%)	4,463 (17%)	25,851 (100%)
Peel (Mod. GO-ALRT 'A')	6,119 (40%)	4,954 (33%)	1,052 (7%)	276 (2%)	2,675 (18%)	15,076 (100%)
M1-85 (Base Case)	6,547 (43%)	4,537 (30%)	1,012 (7%)	421 (3%)	2,539 (17%)	15,056 (100%)
Range of % distribution	(39-42%)	(32-33%)	(7-8%)	(2-3%)	(16-18%)	

The stability of the trip distribution, despite ranging absolute levels, provides some confidence in analyzing future transportation proposals and requirements and the use of a single forecast, in this case the GO-ALRT "A" estimates, in assessing the relative impact of alternative transportation improvements. There only remains, then, a question as to the extent of the problem, the timing of future demand levels and, hence, the timing of implementation of new transportation infrastructure and service improvements.

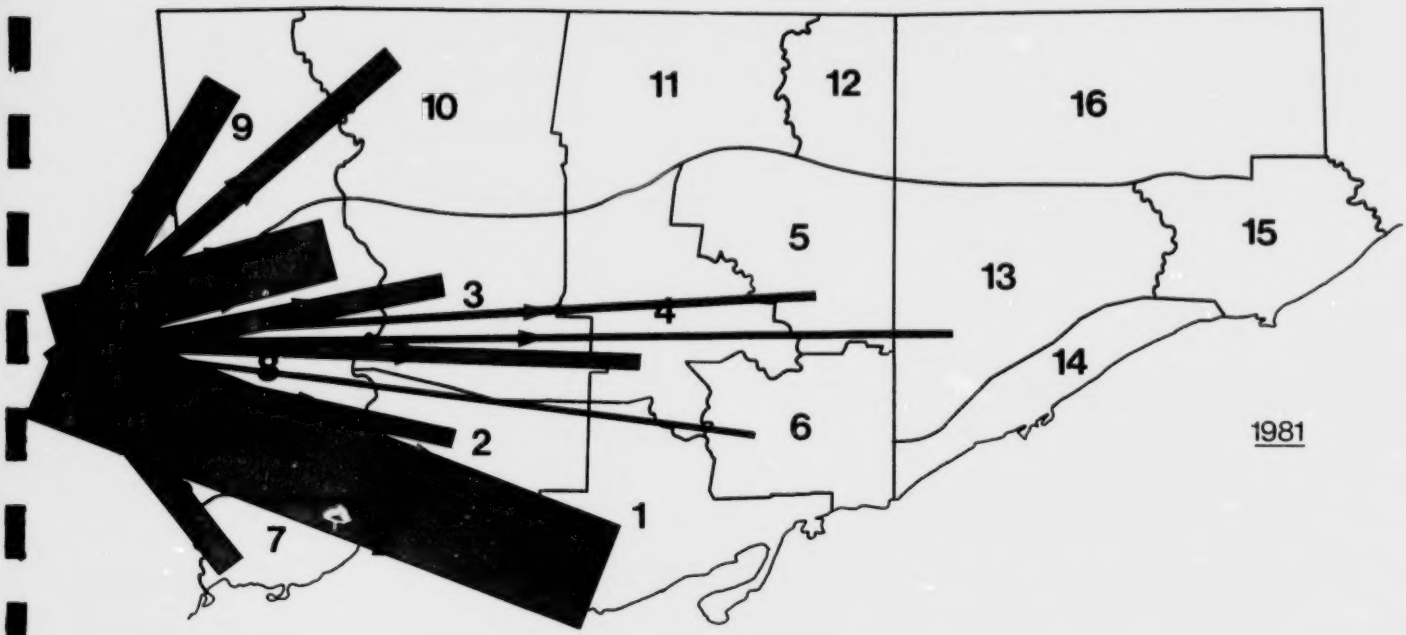
The distribution of destinations within Metro for Peel and Halton residents is illustrated in Exhibits 3.6 and 3.7. These show the observed distribution in 1981 and the projected distribution for 2011. Exhibits 3.8 and 3.9 illustrate the distribution of origins within Mississauga for travel into the main destination areas of Etobicoke and the Toronto Central Area. Exhibit 3.10 illustrates the forecast change in distribution between 1981 and 2011 for Mississauga residents only.

These exhibits illustrate that little change in distribution is expected between 1981 and 2011. New employment in Metro is expected to be shared more or less equally by three identifiable areas:

- Toronto Central Area
- Scarborough and North York City Centres; and
- The rest of Metro.

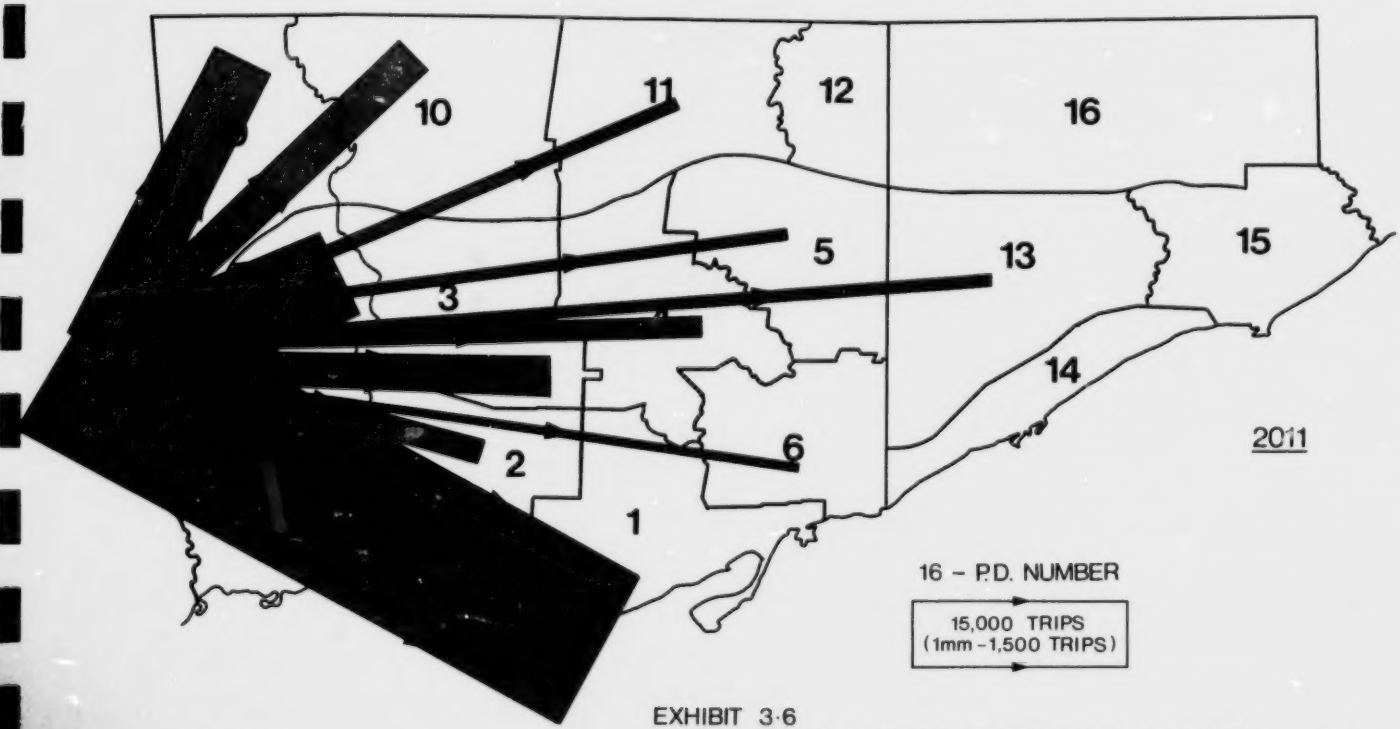
Etobicoke is expected to achieve between 9 and 12% of the employment growth in Metro over the next 25 years. The distribution of new employment is reflected in the future distribution of trips from the west in that there is a continued reliance on the Toronto Central Area for a large proportion of employment; a continued reliance on Etobicoke because of its proximity and major employment growth areas in Rexdale (10-16,000 new jobs) and the Kipling/Islington Centre (16,000 new jobs); and a slight

Total Work Trips From Mississauga to Metro – 76,696



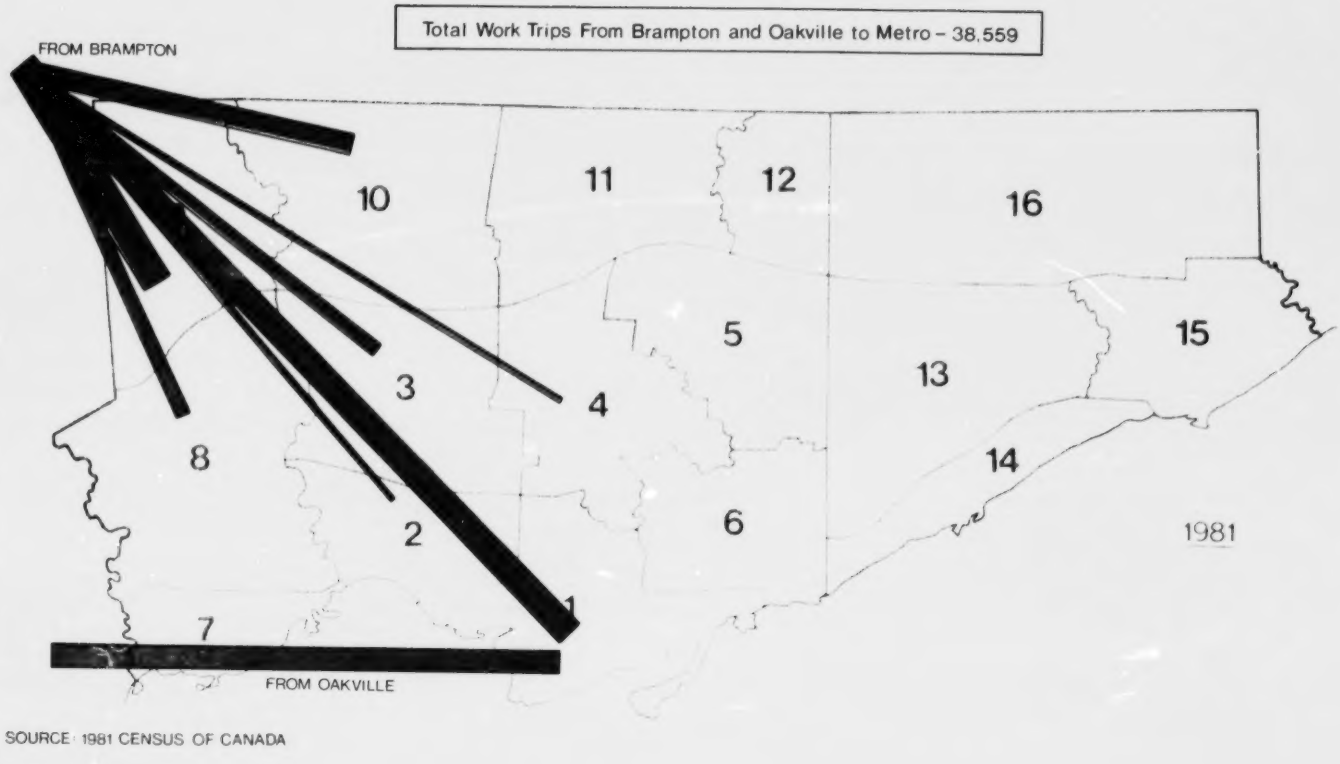
SOURCE: 1981 CENSUS IN CANADA

Total Work Trips From Mississauga to Metro – 117,826

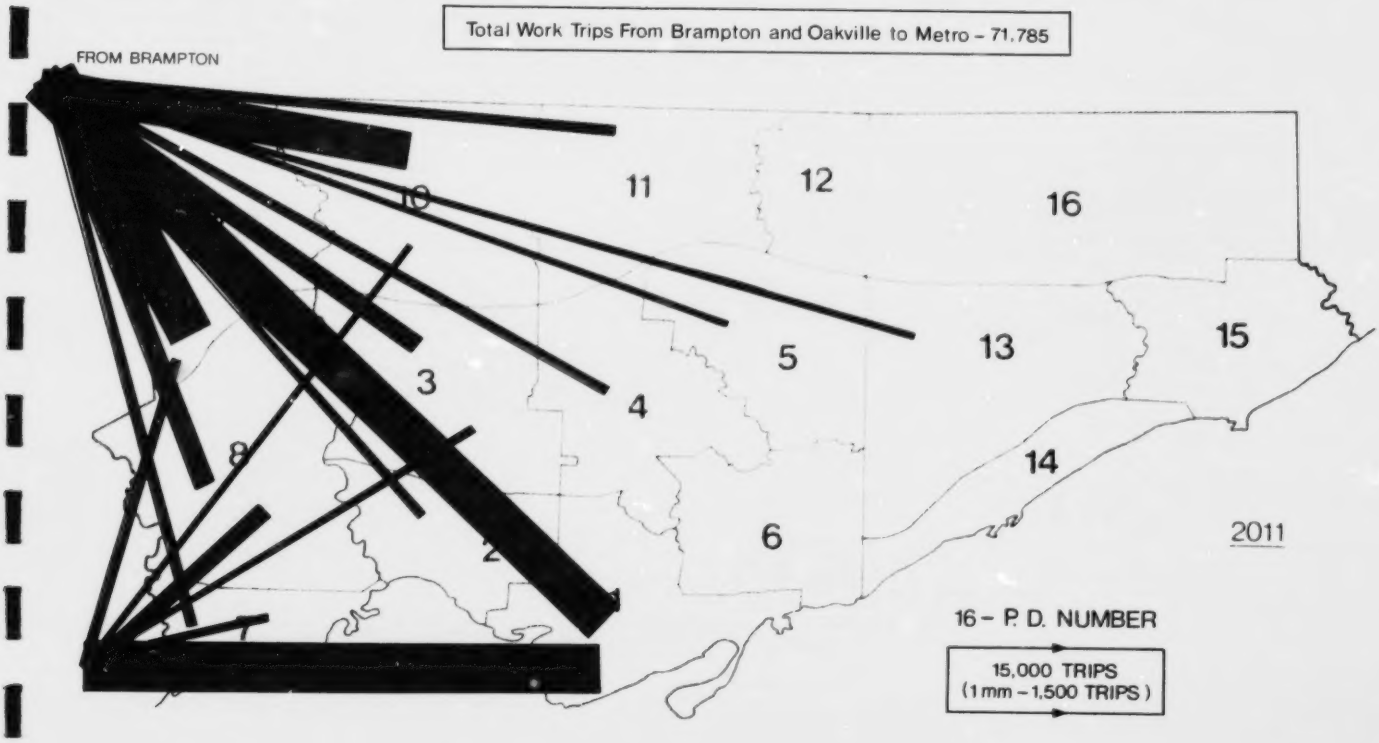


SOURCE: METRO TRAVEL DEMAND MODEL
(GO-ALRT 'A' BASE CASE)

EXHIBIT 3·6
COMPARISON OF 1981 AND FORECAST 2011, 24 HOUR
WORK TRIPS FROM MISSISSAUGA TO METROPOLITAN TORONTO
(ALL INTERCHANGES GREATER THAN ONE THOUSAND TRIPS)



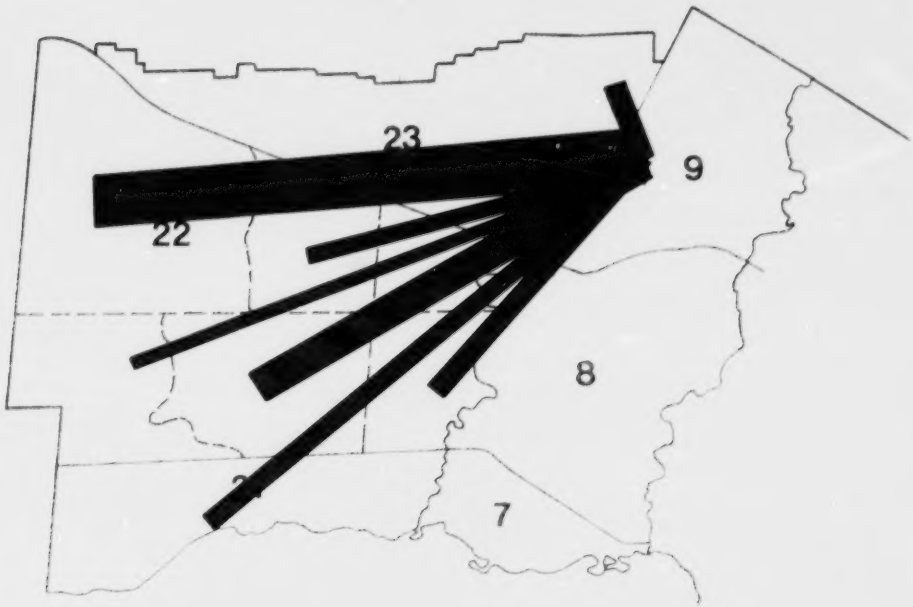
SOURCE: 1981 CENSUS OF CANADA



SOURCE: METRO TRAVEL DEMAND MODEL
(GO-ALRT 'A' BASE CASE)

EXHIBIT 3-7
1981 AND FORECAST 2011, 24 HOUR WORK TRIPS FROM BRAMPTON AND OAKVILLE TO METROPOLITAN TORONTO
(ALL INTERCHANGES GREATER THEN 1000 TRIPS)

Total Work Trips From Mississauga to P.D. 9 – 22,330



Total Work Trips From Mississauga to P.D. 1 – 61,042

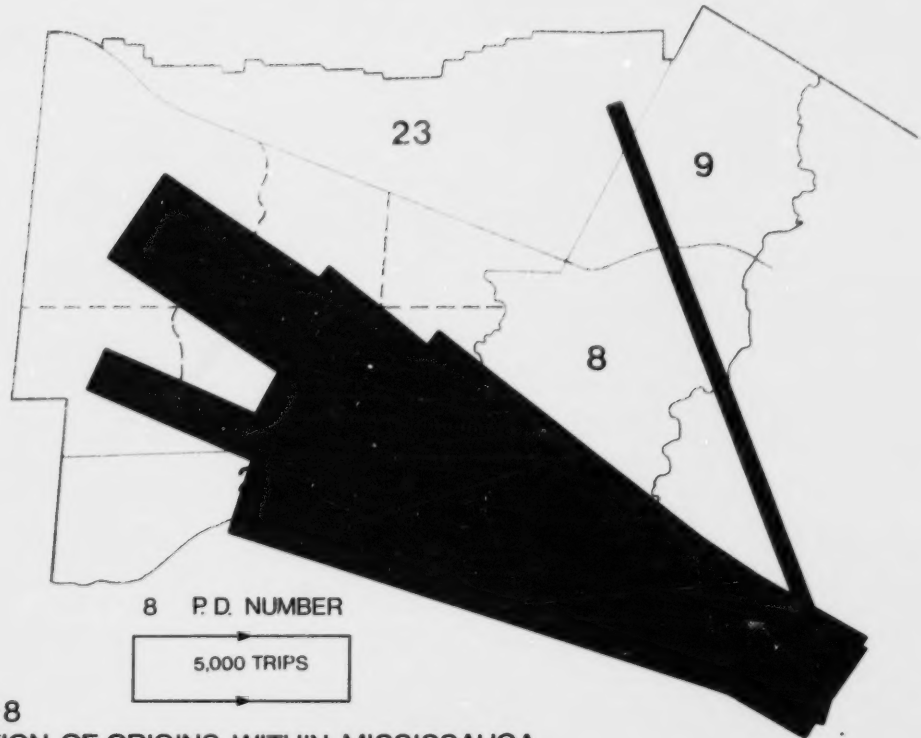


EXHIBIT 3·8
DISTRIBUTION OF ORIGINS WITHIN MISSISSAUGA
FOR 24 HOUR HOME TO WORK TRIPS
TO METRO (P.D. 1 AND 9 ONLY)
(ALL INTERCHANGES GREATER THAN 400 TRIPS)

SOURCE: 2011 TRAVEL DEMAND MODEL
(GO–ALRT 'A' BASE CASE)

Total Work Trips From Mississauga to P.D. 7 – 14,716

Total Work Trips From Mississauga to P.D. 8 – 33,154

8 – P.D. NUMBER

5,000 TRIPS

EXHIBIT 3·9
DISTRIBUTION OF ORIGINS WITHIN MISSISSAUGA
FOR 24 HOUR HOME TO WORK TRIPS
TO METRO (P.D. 7 AND 8 ONLY)
(ALL INTERSECTIONS GREATER THAN 400 TRIPS)

SOURCE: 2011 TRAVEL DEMAND MODEL
(GO-ALRT 'A': BASE CASE)

Exhibit 3.10

FORECAST CHANGE IN DISTRIBUTION OF TRAVEL

FROM MISSISSAUGA TO METRO BETWEEN 1981 to 2011

24 HOUR PERSON TRIPS

Source	Toronto Central Area (P.D.1)	Etobicoke (P.D.7-9)	North York N.of 401 (P.D.10-12	Scarborough (P.D.13-16	Rest of Metro	All Metro
1981 Census	32%	38%	8%	2%	20%	100%
Network 2011 (Base Case)	32%	36%	10%	3%	19%	100%

increase in travel to North York and Scarborough. This latter increase is small, which does not reflect the growth in these areas. The slight increase is more a reflection of the distance of these centres from Mississauga, particularly when considering that future residential development will occur primarily in central to northwest Mississauga.

3.4 Future Modal Split

The modal split between auto and transit is a function of cost and travel time competitiveness between the auto and transit for any particular origin and destination. It follows that when new rapid transit is introduced into a network, it will improve the transit modal split and increase total transit volumes. How much, is dependant on the relative transit travel time improvement provided and whether the transit link is providing a bridge for a significant travel desire.

Exhibit 3.11 shows the comparison of modal split at the West Metro boundary for the Base Case and the System 3 networks and different land-use scenarios.

It has to be recognized that the number of auto trips for both forecasts is unrealistically high, particularly across Screenline 1. This is because there is no capacity restraint facility at the modal split stage of the modelling process and so auto trips are assigned to roads despite there being inadequate capacity. Hence, a rationalization of these assignments should be conducted. Of particular note is ridership on the GO services remaining at 19% (or lower) of cross-boundary travel, which is unrealistic given the strong desire for downtown travel, and the recent trend of increasing share of the cross-boundary travel market (currently 19% in the morning peak hour). The relatively small shift to transit, in both percentage and absolute terms between the Base Case and System 3 (including a continuous Eglinton rapid transit line) networks is due largely to the extensive surface transit assumed in Peel for the Base Case. The largest transit shift occurs

EXHIBIT 3.11

COMPARISON OF 2011

TRAVEL FORECASTS FOR THE WEST METRO BOUNDARY

A.M. PEAK HOUR EASTBOUND, HOME TO WORK PERSON TRIPS

	GO-ALRT 'A'				M1-85				Peel (Mod.'A')	
	Base Case		System 3		Base Case		System 3		(Base Case)	
Auto	70,500	(66%)	70,000	(64%)	61,900	(65%)	61,800	(63%)	58,800	(73%)
Transit	16,200	(15%)	19,600	(18%)	15,400	(16%)	18,100	(18%)	12,700	(16%)
GO-Rail	20,500	(19%)	20,200	(18%)	18,400	(19%)	18,300	(18%)	9,000	(11%)
Total Persons	107,200	(100%)	109,800	(100%)	95,700	(100%)	98,200	(100%)	80,400	(100%)

between the existing situation (91% cross-boundary transit use in 1985) and the Base Case (15%-16%). While individual zones linked by the Eglinton line may show high modal shifts to transit, the overall impact (in terms of travel time reductions), of the Eglinton line is limited when compared with the high level of surface transit service for the Base Case.

4.0 THE EXISTING TRANSPORTATION SYSTEM

4.1 Roads

4.1.1 Current Road System

The existing road network crossing the West Metro Boundary is shown in Exhibit 4.1. The major routes are classified by function, number of lanes and current volume in Exhibit 4.2. Further discussion regarding capacities is continued in section 4.1.2.

From the Lake to Eglinton Avenue, Mississauga and Metro are separated by a natural barrier, the Etobicoke Creek. From Eglinton Avenue to Steeles Avenue, the two municipalities are largely separated by a man-made barrier, the Lester B. Pearson International Airport. These two barriers have the effect of limiting the number of east west road links between the two municipalities. This results in roads being discontinuous, (e.g. Rathburn, Sherway Drive) and others having no counterpart on the other side of the boundary (e.g. Horner Avenue, Evans Avenue, North Queen Street on the Metro side; Matheson Boulevard on the Mississauga side). There is a further phenomenon to be appreciated in understanding the way the Mississauga/Metro boundary is shaped. The boundary point at the Lake occurs where the shoreline changes direction. The road grids for Mississauga and Metro are consequently not parallel, and although they share roughly the same boundary length, the height measured perpendicular to the road grid of Mississauga is around 16 kilometres and in Etobicoke is around 20 kilometres. If one then compares the number of roads intersecting Dixie Road in Mississauga and Kipling Avenue in Metro, (the closest major arterials either side of the boundary), the comparison is around 30 east-west intersections along Dixie feeding into 19 at the boundary and then around 55 intersections at Kipling. This demonstrates that the transportation problems at the boundary are very much <u>at</u> the boundary, and that the denser more grid-like road system in Metro, although not without difficulties due to link discontinuities, allows for dispersion of the problem (certainly east of Highway 427).

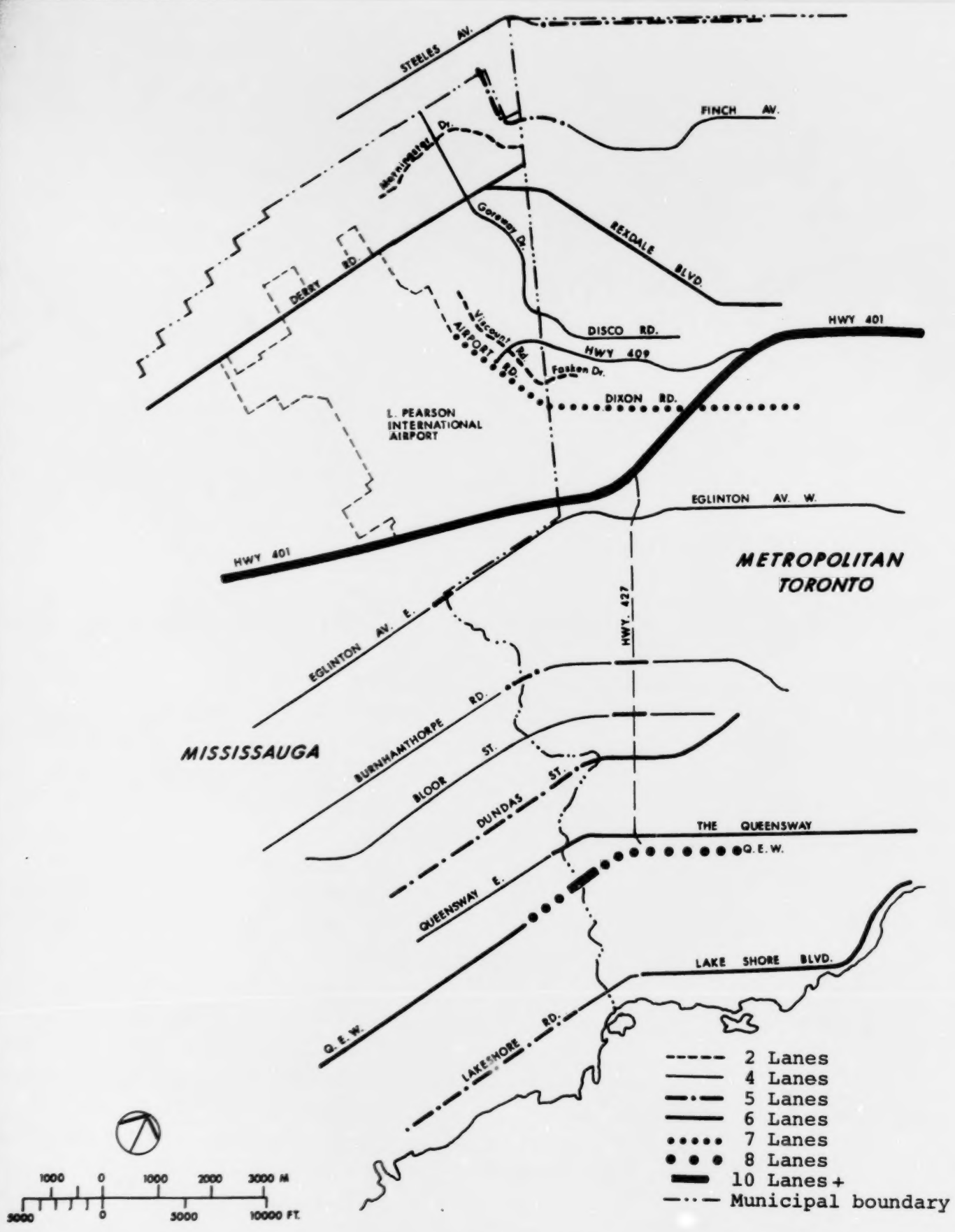


EXHIBIT 4.1 CURRENT BOUNDARY ROADWAYS

EXHIBIT 4.2

EXISTING ROADWAYS CROSSING THE WEST METRO BOUNDARY

Facility (Screenline #)	No. of Lanes/ Direction	Type of Road	1985 Cordon Count (a.m.Peak Hr)
Lakeshore (1)	2	Medium Capacity Arterial	1857
Q.E.W. (1)	3 (Thru) 1 (Ramp)	Freeway	8191
Queensway (1)	3 (Metro) 2 (Miss.)	High Capacity Arterial	2483
Dundas (1)	3 (Metro) 2 (Miss.)	High Capacity Arterial	1342
Bloor (2)	2	Medium Capacity Arterial	1624
Burnhamthorpe (2)	2	Medium Capacity Arterial	2295
Eglinton (2)	2	High Capacity Arterial	2026
Highway 401 (2)	4 (Core) 5 (Collector)	Freeway	7056
Airport/Dixon (3)	3	High Capacity Arterial	1428
Fasken (3)	1	Collector	327
Highway 409 (3)	3	Freeway	926
Goreway/Disco (3)	2	Medium Capacity Arterial	762
Rexdale (3)	3	High Capacity Arterial	1652
Morningstar (3)	1	Collector	520
Finch (3)	2	High Capacity Arterial	1687
Steeles (3)	2	High Capacity Arterial	1053

The location of Highway 427 just to the east of the boundary also attracts a great deal of traffic across the boundary. For example, instead of vehicles travelling north in Mississauga and then east across the boundary, the tendency is for vehicles to travel east in Mississauga and then north along Highway 427. This causes some pressure towards the south of the boundary.

4.1.2 Road Capacity

A first attempt to define the capacity of roadways at the boundary, based on Level of Service 'E' link capacity, proved to be unsuccessful in that many of the roads were carrying volumes of traffic largely in excess of this rated capacity, and from field observations, not necessarily at a level of service worse than 'E'. A second attempt was then made to estimate a saturation capacity based on the traffic signal settings at the intersections immediately east of the boundary. This exercise was able to explain the high traffic volumes on certain links, but for other links the difference between boundary counts and intersection capacity was just as great.

A somewhat pragmatic approach was then taken to assess a practical boundary capacity. The 1985 vehicle count was compared with the two rated capacities, and the lower of the two capacities was taken as the assumed practical capacity, except where the count exceeded rated capacity, in which case the count was used. The results of this exercise are shown in Exhibit 4.3. This uniformly applied 'pragmatic' approach is one which is likely to yield a feasible maximum capacity approximating Level of Service E, which a uniform application of theoretical capacities is unlikely to do.

It is realized that this exercise is somewhat subjective and further work would be required to explain the discrepency between theory and practice. This would entail an examination of local conditions which allow for differing capacities along roads of the same basic type.

EXHIBIT 4.3

ROADWAY CAPACITIES AT THE BOUNDARY
(vehicles per hour)

Facility	A.M. Peak Hr. Cordon 1985 Count	L.O.S. 'E' Link Capacity	Intersection Saturation Capacity**	Assumed Practical Capacity
Lakeshore	1,857	1,500	1,360	1,860
Q.E.W.	8,191	7,250	n.a.	8,200
Queensway	2,483	1,870	1,890	2,500
Dundas St.	1,342	1,870	2,375	1,870
Screenline 1	13,873	12,490		14,430
Bloor St.	1,624	1,500	1,820	1,700
Burnhamthorpe	2,295	1,500	1,640	2,300
Eglinton Ave.	2,026	1,400	1,440	2,050
Highway 401	7,056	16,000	n.a.	12,000*
Screenline 2	13,001	20,900		18,050
Dixon Road	1,428	2,800	2,760	2,800
Rexdale Blvd.	1,652	2,800	1,080	2,800
Morningstar Dr.	520	500	n.a.	550
Steeles Ave.	1,053	1,900	1,650	1,650
Fasken Dr.	327	500	n.a.	500
Disco Rd.	762	1,500	n.a.	1,500
Highway 409	926	6,000	n.a.	1,200*
Darcel/Finch	1,687	1,900	n.a.	1,900
Screenline 3	8,255	17,900		12,900
Total West Metro Boundary	35,229	53,150		45,380

* An estimate of useable capacity

** Capacity on the Metro side

Three exceptions to this procedure are noted. The first was in the consideration of Highway 401 capacity. In theory, the 9 lane cross-section could possibly carry a traffic volume in excess of 18,000 vehicles per hour (vph). Unfortunately the collector/distributor system is not continuous through Highway 427 to Islington Avenue. Combined with the fact that Highway 401 at Islington is a bottleneck, back-ups in this section can stretch back as far as the boundary, causing reduction in useable capacity at the boundary. There is, however, a total lane balance east of the boundary; 3 through lanes, 2 lanes along Eglinton Avenue and 4 to Highway 427 (north and south) indicating the possibility of using a major proportion of the 9 lane capacity for travel other than through traffic on Highway 401. The practical capacity for this link is thus difficult to determine, and a somewhat arbitrary capacity of 12,000 vph has been adopted for this study. The 1983 count, which was greater than the 1985 count for this section of Highway 401, was over 9,000 vph, this count being taken before the freeway had been widened in Mississauga to the current configuration. It is reasonable to assume that 'ultimate capacity' for this link will only be determined by observation of future counts.

A second exception in this exercise was Highway 409. The westbound capacity was rated at 6,000 vph while the eastbound capacity, because of its poor connections from the west was rated as 1,200 vph. This was derived by factoring the 1985 eastbound count of 926 vehicles in the A.M. peak hour by the forecast travel growth across this section of the boundary (22%). Finally, the large discrepency between link and intersection capacity on Rexdale Boulevard appeared anomalous, and Rexdale was assumed to have a capacity comparable to Dixon Road, a parallel three lane, high capacity arterial.

4.2 Transit

Existing cross-boundary transit services are shown in Exhibit 4.4.

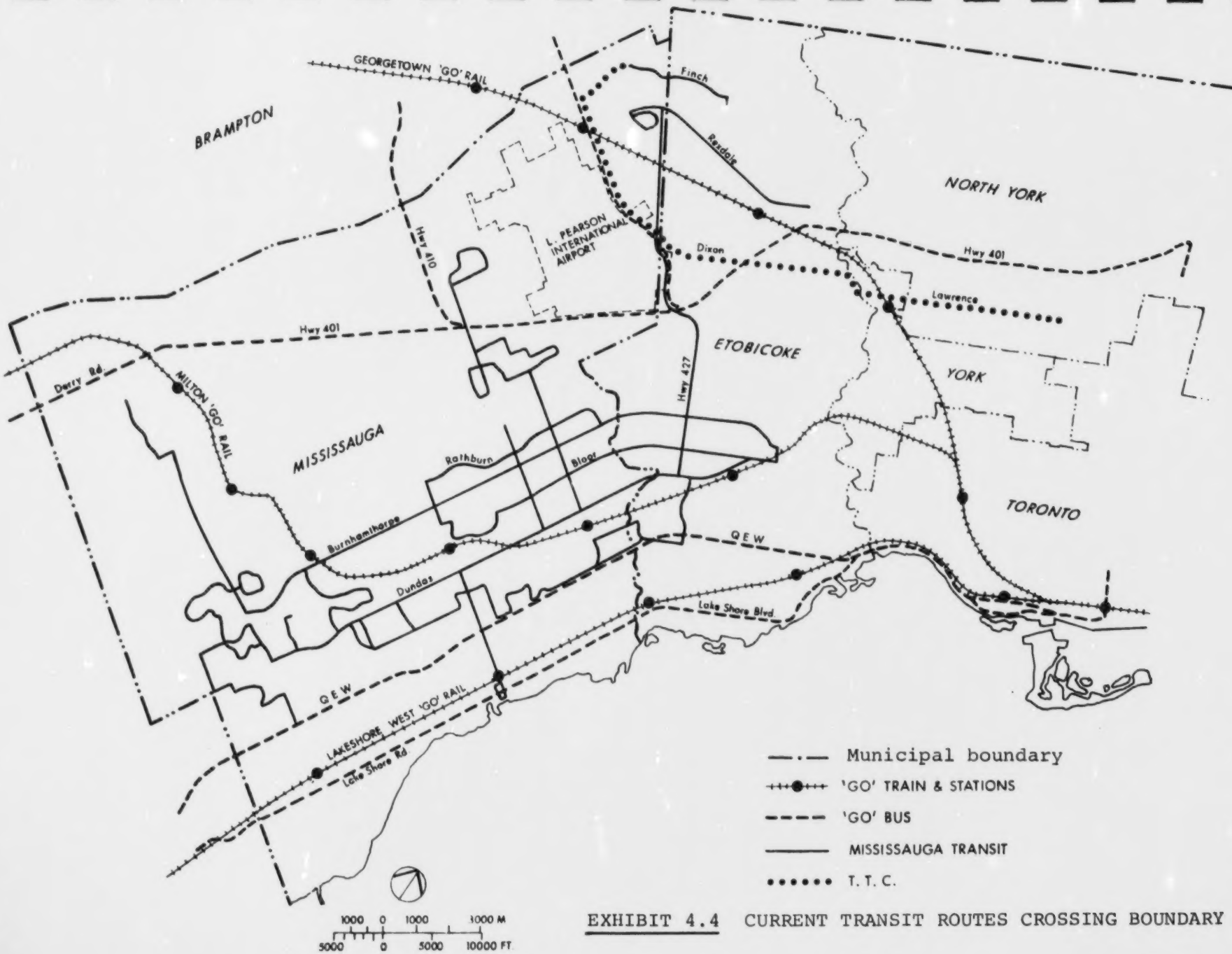


EXHIBIT 4.4 CURRENT TRANSIT ROUTES CROSSING BOUNDARY

4.2.1 GO Transit

GO Transit provides 3 commuter train services that pass through Peel en route to Metro. A summary of these services follows:

1. Lakeshore West (commenced in 1967)
   - Stations at Oakville West and Oakville, Clarkson and Port Credit (both in Mississauga), Long Branch and Mimico (both in Etobicoke), Exhibition (special events only) and Union Station in Toronto;
   - 2 trains inbound a.m./outbound p.m. extend to Burlington and Hamilton;
   - full service seven days a week;
   - 6 trains arrive at Union Station in the morning peak between 7:47 and 8:47 a.m. and ten between 6:25 and 9:07 a.m.; 5 departures from Union Station between 4:43 and 5:43 p.m.

2. Milton (commenced in 1981)
   - Stations at Milton, Meadowvale, Streetsville, Erindale, Cooksville, Dixie (5 stations in Mississauga), Kipling (Etobicoke),Dundas and Union Station (Toronto);
   - service five days a week;
   - three rush hour trains each way; arrivals at Union Station between 7:34 and 8:24 a.m. and departures between 4:40 and 5:30 p.m.

3. Georgetown (commenced in 1974.)
   - Stations at Georgetown, Brampton, Bramalea and Malton (Mississauga), Etobicoke North, Weston, (York) Bloor and Union Station in Toronto;
   - service five days a week;
   - four rush hour trains into Toronto in the morning and out of Toronto in the Evening; arrivals at Union Station between 7:25 and 8:40 a.m., departures from Union Station between 4:32 and 5:45 p.m.

A summary of GO Bus services operating through Mississauga to Metro follows:

1. Lakeshore West GO Bus
   - operates locally beween Hamilton and Toronto Bus Terminal;
   - service 7 days a week;
   - service mostly at 1 hour intervals;
   - additional Q.E.W. express services from Hamilton.

2. Milton GO Bus
   - operates between Meadowvale and Erin Mills in Mississauga via Highway 401 to Downsview, (Keele and Wilson) Yorkdale and York Mills in North York;
   - service 7 days a week;
   - a total of 11 buses per week day in each direction (4 during peak periods);

3. Northwest GO Bus
   - Operates between Bramton, Bramalea, Malton (Mississauga), Pearson International Airport via Highway 401 to Downsview, (Keele and Wilson) Yorkdale and York Mills;
   - service 7 days a week;
   - 35 buses each way, each weekday (4 during peak periods).

4.2.2 Mississauga Transit

Mississauga Transit operates regular routes which cross the West Metro boundary into Etobicoke and are primarily destined to the Islington subway station. These services are summarized in Exhibit 4.5.

Once the Mississauga Transit buses cross the boundary into Metro, they are restricted to dropping off passengers only. Passenger pick-up is not allowed while in Metro for eastbound service. On the return journey, all

EXHIBIT 4.5

MISSISSAUGA TRANSIT CROSS-BOUNDARY BUS SERVICES

Metro Terminals	Roadway Travelled at Boundary	Route No.	# Buses During a.m. Peak Hour One-way	Total Weekday Buses One-way
Humber College/ General Hospital	Finch	22	2	32
Rexdale and Islington	Derry	12	2	14
	Derry	30	No route 30 service during rush hours	17
Islington Subway Stn.	Dundas	1	8	94
	Bloor	3	12	98
	Evans	4	2	30
	Burnhamthorpe	6	6	80
	Dundas	11	2	40
	Bloor	17	No E.B.service in a.m. peak	12
	Burnhamthorpe	20	3	34
	Dundas	21	8	94
	Burnhamthorpe	26	6	72
	Dundas	27	2	2
	Dundas	31	2	20
	Dundas	41	2	6
	Dundas	51	4	14
Long Branch Loop	Lakeshore	5	4	58
	Lakeshore	23	3	46

Note:
Those routes with connecting service at the Islington Subway Station will be re-routed to terminate at the Kipling Subway Station sometime in the near future.

westbound Mississauga transit buses are restricted in Metro to picking up passengers only. No passenger drop-off is allowed while in Metro for the westbound leg of the journey.

4.2.3 T.T.C.

The T.T.C. operates just one cross-boundary route (#58) into the Airport and Westwood Mall (Malton) from the Lawrence West subway station in Metro. Passengers who take the bus accross the boundary have to pay a Mississauga fare as well as a T.T.C. fare.

The Bloor subway is used by many Mississauga residents to access the Toronto Central Area. The T.T.C. are to add two additional trains to this line in September, 1986, and a further two in both 1988 and 1990.

4.3 Transportation Deficiencies

4.3.1 Roads - Existing

Exhibit 4.6 shows how the roads at the boundary were operating in 1985 with a comparison of observed vehicle count data against capacity. The table shows Screenline 1, between Dundas and the Lake, to be currently experiencing close to capacity conditions in the morning peak hour.

Certain roads crossing Screenline 3 currently experience larger westbound than eastbound traffic volumes in the morning peak hour, namely Airport Road and Highway 409. A balanced flow exists on Rexdale Boulevard. Exhibit 4.7 shows the current volume/capacity ratios for westbound A.M. peak hour travel.

4.3.2 Roads - Future

Exhibit 4.8 shows how the 2011 forecasts for autos crossing the boundary in the a.m. peak compare with current road capacity. The demand model produces an unconstrained vehicle assignment and therefore gives an

EXHIBIT 4.6

1985 Volume/Capacity Ratios at West Metro Boundary (Inbound)

Screenline	A.M. Peak Hour Count	Capacity,* Metro Side (Miss. Side)	V/C Ratio, Metro Side (Miss. Side)
1. Dundas to the Lake	13,873	16,615 (14,430)	0.83 (0.96)
2. Bloor to Highway 401	13,001	18,050 (18,050)	0.72 (0.72)
3. Airport to Steeles	8,355	12,900 (12,900)	0.65 (0.65)

EXHIBIT 4.7

1985 Volume/Capacity Ratios at West Metro Boundary (Outbound)

Screenline	A.M. Peak Hour Count	Capacity,* Metro Side (Miss. Side)	V/C Ratio, Metro Side
1. Dundas to the Lake	6,580	16,615 (14,430)	0.40 (0.46)
2. Bloor to Highway 401	8,296	18,050	0.46
3. Airport to Steeles	7,348	12,900	0.57

* See Section 4.1.2

EXHIBIT 4.8

FORECAST AUTO VEHICLE VOLUMES AT THE WEST METRO BOUNDARY (2011, EASTBOUND A.M. PEAK HOUR)

Screenline	Current Capacity*	GO-ALRT 'A' Base Case HBW	GO-ALRT 'A' Base Case PCU's	GO-ALRT 'A' System 3 HBW	GO-ALRT 'A' System 3 PCU's	M1 - 85 Base Case HBW	M1 - 85 Base Case PCU's	M1 - 85 System 3 HBW	M1 - 85 System 3 PCU's
1. Dundas to Lake	16,615	23,291	26,370 (1.59)	22,889	25,415 (1.53)	19,401	21,965 (1.32)	19,210	21,750 (1.31)
2. Bloor to Highway 401	18,050	16,017	19,263 (1.07)	16,355	19,670 (1.09)	13,705	16,480 (0.91)	14,031	16,875 (0.93)
3. Airport to Steeles	12,900	10,179	13,913 (1.08)	9,941	13,588 (1.05)	10,157	13,883 (1.08)	9,925	13,566 (1.05)
Total Boundary (Excl. Hwy. 409)	47,565	49,487	59,546 (1.25)	49,185	58,673 (1.23)	43,263	52,328 (1.10)	43,166	53,191 (1.12)

Legend:

V/C ratios in brackets
* Metro side only
HBW-Home to Work trips only
PCU's - addition of trucks to HBW
includes factor of 2 for trucks
truck content: 6.2% for Screenline 1, 9.2% for Screenline 2, 15.5% for Screenline 3

indication of travel desires and not necessarily a reflection of what would actually happen with actual capacity constraint. This is shown by the fact that in all cases, the road system at one section or another is shown significantly over capacity. This shows where future pressure will be exerted on the road system and indicates where a transit solution to the road capacity problem has to be aimed.

The previous section described how Screenline 1 is currrently experiencing the most pressure. The forecast for 2011 using the GO-ALRT "A" land use scenario shows around a 23% increase in demand for each of Screenlines 2 and 3, and a 64% increase for the already congested Screenline 1. Travel demand based on Metro's new land use forecast (M1-85) shows a 40% increase for Screenline 1, a 22% increase for Screenline 3 and only a 5% increase across Screenline 2. Screenline 2 is where the largest difference in forecasts is to be seen. Screenline 3 would be under pressure but might be able to cope with road and modest transit improvements. Screenline 1 would, for all scenarios, be unable to cope with the forecast traffic.

Given that the forecasts show the scale of problem to be different among forecasts it is conceivable that the roads in Screenlines 2 and 3 will be able to cope with the increase for some years. Forecasts for Screenline 3 show a larger westbound A.M. peak hour traffic assignment. However, the volume/capacity ratio is still higher in the eastbound direction because of the availability of Highway 409 as a westbound link to the boundary.

Screenline 1 however, is shown to have serious problems quite soon. The Region of Peel has recently produced a peak hour forecast for 1991 of 15,503 vehicles (including 62% trucks) at screenline 1, an increase of 1,630 vehicles over the 1985 count. Widening of the Queensway on the Mississauga side, which is recommended in the Mississauga Transportation Study, could increase capacity by over 1,000 vph. This would indicate the screenline would be operating at capacity in 1991 even with the widening.

Further steps, such as the widening of Dundas Street or transit initiatives would need to be taken around the same time.

Discussion has focused on where the main demand for auto travel lies. This gives an excellent indication of where improved transit services have the greatest opportunity to effect a forced modal split, both currently and in the future. Given that there seems to be a reasonable consensus between the forecasts of where the future problem will be and the current situation is a confirmation of this, it now remains to identify why these roads are attracting such a large volume of traffic.

In order to more closely identify the problem at Screenline 1, the distribution of destinations from the 2011 auto assignment was tabulated and is shown in Exhibit 4.9. People travelling by auto from the west to Etobicoke for the purpose of work make up 50% of the travel across this screenline. Of the total auto travel across this screenline, 39% are destined to Etobicoke south of Bloor and Dundas, and 19% of the total are destined to Etobicoke south of the Q.E.W. Although this is a tabulation of a 2011 forecast, it is highly likely that this is also the situation today. Using results from Metro's 1980 base year model calibration run, it is estimated that only 5% of workers destined to Etobicoke from the west use transit. Combining this statistic with the fact that trips to Etobicoke from the west already constitute 38% of total travel, it can be seen that because of the low transit modal split (as compared to downtown destined commuters where transit modal split is around 67% from the west), the Etobicoke destined commuter contributes more than 38% of the auto travel demand, i.e. 50% for Screenline 1.

In order to get an idea of where auto travel across the whole West Metro boundary is destined, a similar tabulation was made and is shown in Exhibit 4.10.

EXHIBIT 4.9

DISTRIBUTION OF DESTINATIONS

SCREENLINE 1 - (DUNDAS TO THE LAKE)

2011 EASTBOUND A.M. PEAK HOUR AUTOS (GO-ALRT 'A' LAND-USE)

South Etobicoke (south of Bloor)	9,073 (39%)
North Etobicoke (P.D.9)	1,453 (6%)
Central Etobicoke (north of Bloor)	1,014 (4%)
Sub Total - (Etobicoke)	11,540 (50%)
P.D.1 (Downtown Toronto)	4,510 (19%)
North York (N.of 401)	1,527 (7%)
Scarborough/York/Durham	1,776 (8%)
Airport/Malton	694 (3%)
Rest of Metro (P.D. 2-6)	3,244 (14%)
TOTAL	23,291 (100%)

EXHIBIT 4.10

DISTRIBUTION OF DESTINATIONS WEST METRO BOUNDARY

2011 EASTBOUND A.M. PEAK HOUR AUTOS (GO-ALRT 'A' LAND USE)

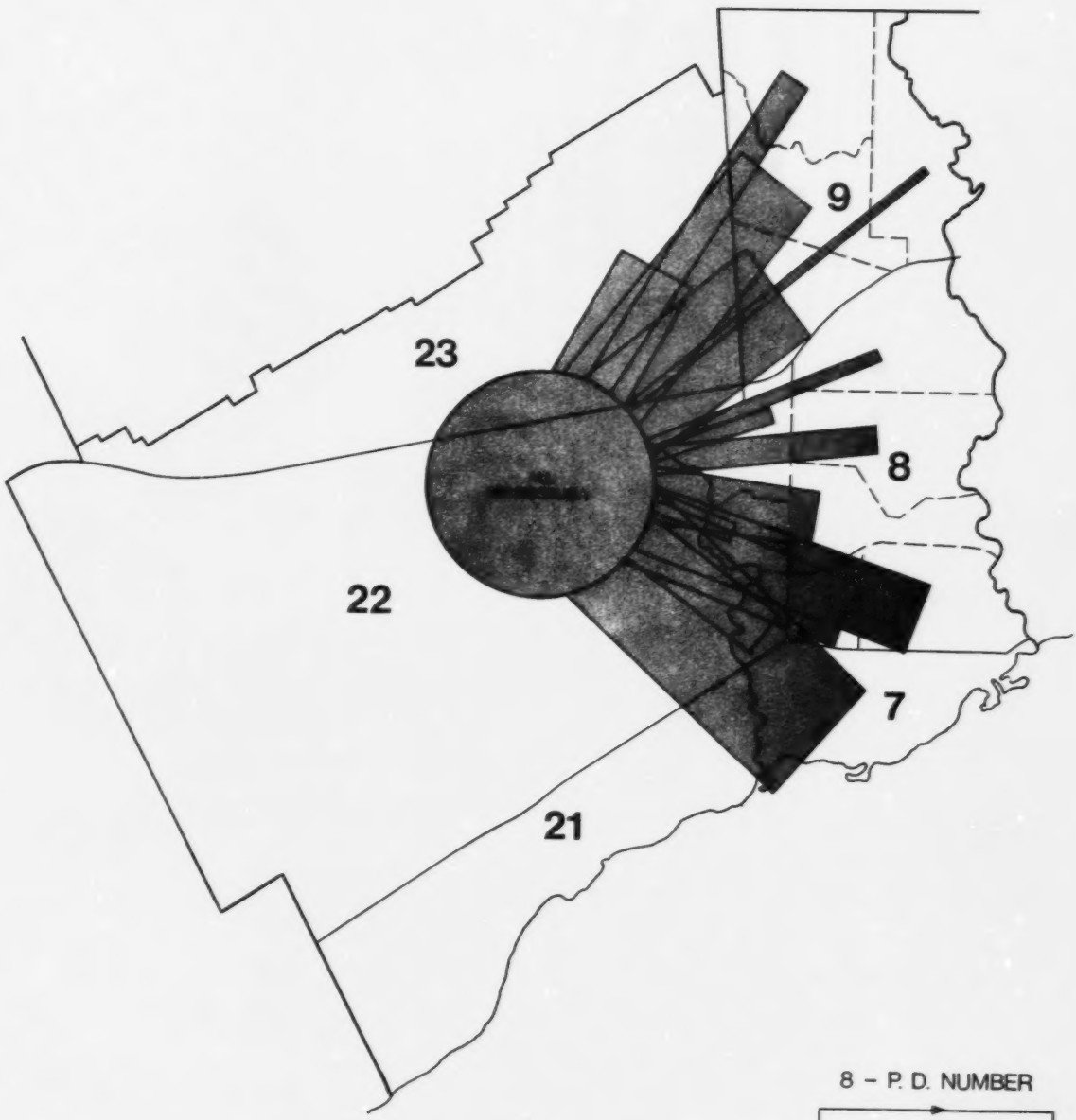
	Screenline 1. (Dundas to Lake)		Screenline 2. (Bloor to Highway 401)		Screenline 3. (Airport to Steeles)		All West Metro Boundary	
South Etobicoke (P.D								
Central Etobicoke (P.D.8)	6,144	(26%)	2,016	(13%)	806	(8%)	8,966	(9%
North Etobicoke (P.D.9)	1,453	(6%)	2,998	(19%)	3,057	(30%)	7,508	(14%
Sub-Total (Etobicoke)	11,540	(50%)	5,096	(32%)	4,168	(43%)	20,804	(43%
Downtown Toronto (P.D.1)	4,510	(19%)	547	(3%)	653	(7%)	5,710	(12%
North York (N. of Highway 401)	1,527	(7%)	2,828	(18%)	1,427	(15%)	5,782	(12%
Scarborough/York/Durham	1,776	(8%)	2,340	(15%)	993	(10%)	5,109	(10%
Airport/Malton	694	(3%)	1,328	(8%)	546	(6%)	2,568	(5%
Rest of Metro (P.D.2-6)	3,244	(14%)	3,878	(24%)	1,816	(19%)	8,938	(18%
TOTAL	23,291	(100%)	16,017	(100%)	9,603	(100%)	48,911	(100%

There is some difference in assigned volumes to Screenlines 1 and 2 between the Peel and Metro forecasts. Peel forecasts a lower volume at Screenline 1, although still exceeding capacity, and higher volumes at Screenline 2, indicating a larger problem across this screenline than indicated by the Metro model runs. Again, we make no attempt here to identify the 'correct' assignment. The important point to remember, noting Exhibit 4.10, is that the largest travel demand across both screenlines that is not well served by transit is the shorter distance commuting, particularly into Etobicoke.

The overall picture of inadequate transit services accross the boundary to Etobicoke is illustrated in Exhibit 4.11, where the desire lines for forecast auto travel to Etobicoke are drawn. This shows that the large industrial/commercial areas in the Rexdale/Airport area and particularly in south Etobicoke are largely auto dependent and, by implication, poorly served by transit. This is illustrated in Exhibit 4.5, where it is shown that Rexdale is served only from Malton and no direct service is provided into the industrial area in the south.

As a comparison, the current situation for Peel residents is akin to expecting residents of the City of York travelling to Etobicoke to change buses at the municipal boundary (Humber River) and also being asked to pay an extra fare, a scenario that does not lend itself to encouraging transit usage.

Exhibit 4.9 also indicates that a significant proportion (19%) of auto travel across Screenline 1 is headed for the Toronto Central Area (P.D.1). Given that 75% of the new development in downtown Toronto is going to be south of Queen Street (i.e. near to Union Station), a higher transit modal split to this destination may be possible. Another identifiable destination area shown in Table 4.3.4 is North York (north of Highway 401) which includes the North York Civic Centre. Two GO Bus services from Malton and Meadowvale already serve these areas and additional services from other parts of Mississauga are worth consideration.



SOURCE: METRO TRAVEL DEMAND MODEL
(GO-ALRT 'A' BASE CASE)

EXHIBIT 4·11
2011 A.M. PEAK HOUR EAST BOUND AUTO TRIPS
FROM MISSISSAUGA TO ETOBCIOKE (AND AIRPORT)

5.0 REVIEW OF POTENTIAL IMPROVEMENTS

5.1 Road Improvements

5.1.1 Background

Many of the roads at the West Metro Boundary are currently operating at or near capacity in the morning peak hour. Without improvements to road capacity at the boundary there will be a tendancy for a combination of events to occur:

- o further spreading of the peak period;
- o forced modal split towards transit;
- o slowing down of transit services;
- o increased operating time and costs for the trucking industry; and
- o development of alternative land use and trip-making patterns.

The first two points are an inconvenience to commuters but have some positive operational aspects, the third and fourth are important concerns, while the last point is somewhat speculative at this time. To encourage a move towards greater transit usage, the bus services need to maintain reasonable speeds to compete with the automobile. Increased journey times for the trucking industry produce increased operating costs. Exhibit 2.7 shows the large number of trucks using certain roads at the boundary in the a.m. peak hour. Note particularly the higher percentage along Dundas Street serving the commercial strip development in Mississauga and also the high truck percentage in the vicinity of the airport, serving the industrial centres either side of the boundary.

5.1.2 Potential Road Widenings

The characteristics of each roadway crossing the boundary are tabulated in Exhibit 5.1. The feasibility of making improvements to these roads is discussed in this section.

Exhibit 5.1

CHARACTERISTICS OF ROADWAYS CROSSING BOUNDARY

	Metro Side			Mississauga Side		
Roadway	# of Lanes (1-way)	Ultimate ROW width* (metres)	Pred-ominant Adjacent Land Use (see key)	# of Lanes (1-way)	Ultimate ROW Width (metres)	Pred-ominant Adjacent Land Use (see key)
Lakeshore	2	36	R1,R3,R5	2	35	P and R5
QEW	3(thru) 1 (ramp)	75 to 90	R1,P,C	3 (thru) 1 (ramp)	75 to 90	R1
Queensway	3	36	I,C	2	35	I,R1
Dundas	3	36	R1,R5	2	35	C
Bloor	2	27	R1,R5	2	30	R5
Burnhamthorpe	2	36	R1,R3,R5	2	50	R1
Rathburn***	1	30	R1	2	35	R
Eglinton	2	36	V,R1	2	50	V,R1
Highway 401	4 (core) 5 (coll)	75 to 90	I	4 (core) 5 (coll)	75 to 90	Airport,V
Airport/Dixon	3	45	I	2**	45	I
Viscount/ Fasken	1	27	I,C	1	26	I
Highway 409	3	75 to 90	I	3	75 to 90	I
Goreway/Disco	2	27	I	2	26	I
Derry/Rexdale	3	36	I	3	45	I
Morningstar	-	-	-	1	26	R1,R2
Finch	2	36	R2,I	2	36	R1
Steeles	2	45	P	2	36	R1,F

Key V = Vacant Land; P = Parkland; F = Farmland; R1 = Single Family Residential; R2 = Semi-detached; R3 = Row house,Townhouse; R5 = High-rise Residential; R = Mixed density Residential; I = Industrial; C = Commercial.

* Taken from Metropolitan Toronto Official Plan for the Urban Structure

** West of American Drive

*** Rathburn not continuous across boundary

Eglinton and Steeles Avenues both have adequate rights-of-way and/or sufficient adjacent land to allow widening to 6 lanes from the current 4. Existing structures also have allowance for six lanes (with the exception of Steeles Avenue at the Humber River where the bridge has allowance for 5 lanes only). If Eglinton is widened to 6 lanes through Highway 427, which is probably necessary in the future, there is a potential conflict as the E.W.R.T. line preliminary design is shown using the same right-of-way.

Lakeshore Boulevard has some potential for widening on either side of the boundary. It is a road used by many as a by-pass to the Q.E.W. and is often a faster route in the peak periods despite the delays at numerous traffic signals. Widening Lakeshore Boulevard in many sections (e.g. New Toronto) would result in major property impacts and widening the road simply in the region of the boundary would be of limited value due to downstream conditions. Improvements to the intersection with Brown's Line may be possible and may prove a more effective approach. Further to that it would be worth looking into improving intersection capacity (e.g.by providing turning lanes) along the Lakeshore (both sides of the boundary) as opportunities arise.

On the Q.E.W. the current bottleneck is west of the boundary in the Cawthra/Dixie Road area. When eastbound traffic clears this congested area there is a general increase in speed (and hence level of service) until the tailback is met from the next bottleneck at the Humber River (the feasibility of widening the Gardiner east of the Humber River is being investigated at present). If the bottlenecks are removed either side of the boundary, the boundary section could later become a problem. Widening of this section would not be possible without removal of residential property on the south side but may be worthy of consideration in the future. Currently, vehicles travelling between the north and south Service Roads and Evans Avenue can do so only via the Q.E.W. itself. An alternative improvement worth consideration, which would remove this traffic from the Q.E.W., would be to connect the north and south Service Roads directly with Evans Avenue by extending the Service Roads to the boundary and making a connection to the West Mall/Evans Avenue ramps.

The Queensway, Dundas Street and Airport Road are all roads that are built to 6 lanes (and ultimate section) on the Metro side and are only 4 lanes on the Mississauga side. Along Dundas Street there are frequent accesses to the numerous adjacent commercial outlets. Sufficient right-of-way to facilitate widening, is allowed for in the Mississauga Official Plan. Properties are generally set back from the roadway to facilitate widening, however, widening would remove customer parking spaces in places. The Queensway and Airport Road (west of American Drive) would be more feasible to widen due to adequate right-of-way or suitable adjacent land.

On the Metro side of the boundary, Bloor Street and Burnhamthorpe Road are (mostly single family) residential streets with driveway access onto them and would be extremely difficult to widen. These roads are therefore thought to be at their ultimate cross-section.

Highway 401 is 9 lanes in each direction at the boundary and it is thought to be built to its ultimate configuration. A bottleneck on this Highway occurs at the Islington Avenue interchange. Improvements in this area could enable the full capacity at the boundary to be utilized. However, the M.T.C. position is that widening is not feasible through and east of the Islington Avenue interchange.

Rexdale Boulevard is currently a six lane road and is considered to be at its ultimate configuration. Widening Finch Avenue from 4 to 6 lanes is feasible but would be of dubious merit at this time because of its current discontinuity at Albion Road and hence small catchment area. An environmental assessment study has recently been completed which recommends eradicating the discontinuity and is presently being considered by the Ministry of the Environment. When this link is completed, there would be merit in widening Finch Avenue in the future as the need arises.

Highway 409 connects only with Airport Road (and the airport) west of the boundary and is currently under-utilized in the peak traffic periods in the eastbound direction. Widening Highway 409 would be of little value unless

more useful connections to the west could be made. In any event, Highway 401 eastbound from Highway 409 would not be able to handle additional flows.

The airport service roads, Viscount/Fasken, Goreway, Woodbine Raceway entrance and Morningstar serve as local access rather than continuous cross-boundary routes and are not worth consideration for creating increased boundary capacity.

Exhibit 5.2 summarizes the previous discussion in terms of the potential to widen the boundary roads.

5.1.3 Potential New Links

Rathburn Road is a link which is continuous on either side of the boundary but nevertheless does not connect. In 1981, the City of Etobicoke closed up the Rathburn Road allowance and designated it as parkland, partly to prevent future traffic infiltration of residential neighbourhoods. Nevertheless, such a through connection could provide a useful boundary relief function, particularly with an existing Rathburn Road/Highway 427 partial interchange. Limitation to a two-lane cross-section would serve to minimize potential commuting impacts, and the City of Etobicoke should be urged to reconsider its position in this matter.

Another such missing connection is Sherway Drive, just south of the Queensway. The Mississauga side is a residential street and the benefits of completing the link would not be great. North Queen Street is an east-west link in Metro which stops just short of the boundary. If an alignment connecting to Dixie Road could be found, a useful new crossing may be possible. The feasibility of such a connection would have to be investigated further.

Lester B. Pearson International Airport, although located in Mississauga, is situated such that anyone from Mississauga (or origins further west)

EXHIBIT 5.2

FEASIBILITY OF BOUNDARY ROAD WIDENING

Roads with significant potential for widening	Roads with some potential for widening	Roads with little chance of widening
Eglinton	Lakeshore	Bloor
Steeles	Q.E.W. (2)	Burnhamthorpe
Queensway (1)		Highway 401
Dundas (1)		Highway 409 (3)
Airport Road (1)		Rexdale/Derry
Finch (4)		

Notes:

(1) Currently 6 lanes in Metro, only 4 in Mississauga
(2) Some operational improvements possible just west of boundary
(3) Excess capacity currently exists
(4) Widening would be of dubious merit until Finch is continuous across Albion Road.

travelling to the airport must cross into Metro to make the journey, generally from Highway 401 or 427. Although cross-boundary travel to the airport is not a great problem in the morning peak hour (2100 trips forecast for 2011, base case) a new connection from Highway 401 (just east of Dixie Road) to the airport that does not cross into Metro would relieve the boundary of a good proportion of these trips. In the past, consideration has been given to a link into the airport from an easterly extension of Highway 403 (along the Hydro corridor), which then heads northward, crossing Highway 401 (but wiht no intersection) and terminating at new terminal facilities on the south side of the Airport. This extension would also increase accessibility to Mississauga's Airport Corporate Centre.

A further link completion that would be desirable (but much more difficult to implement) would be a connection from Highway 401 or 403 to Highway 409. This would be useful for the following reasons:

- Highway 409 is presently under-utilized as it connects only with the airport and north-south links (Airport Road and Highway 427) to the west;
- the area encompassed by Highway 427, Highway 409 and Rexdale Boulevard is a high employment area and is a large attraction for Mississauga's nearby work force.

Such a connection would relieve Highway 401 at the boundary and transfer some of the demand to Highway 409 which would act as a good distributor to the Rexdale employment area. However, Highway 409 may not be under-utilized once Highway 427 is extended northly to intersect with Highway 7. An alternative to making a Highway 409 connection would be the upgrading (e.g. a degree of grade-separation at intersections) of Derry Road (between Highway 410 and Highway 427), again to serve the Rexdale area. This would be a longer route, but could be an attractive alternative if east-west links further south are experiencing greater congestion. These

alternatives designed to serve the airport and/or Rexdale employment areas are primarily aimed at re-directing traffic away from Highway 427 (and the more congested east-west connectors, south of Highway 401) towards the northern east-west roads where capacity is not such a problem. This redirection might be forced in time, due to congestion and when Highways 403 and 410 are directly connected to allow a northerly migration before heading east. These last few alternatives designed to serve the airport and north-west Metro from the west more effectively would have to be investigated by M.T.C. and Peel more fully in terms of their operational benefits and physical feasibility.

5.1.4 Operational Improvements

The signalized intersections along the arterials east of the boundary are part of Metro's computer controlled traffic management system. The timing of these traffic signals are "fixed" for the morning peak and fixed again for other times of the day. The signal timings are calculated based on observed traffic movements.

The main limiting factor of arterial roadway capacity is not so much road width, as it is intersection design and the amount of signal green time a particular direction is given. One approach to increasing the east-west road capacity is to increase the intersection capacities in the east-west direction. This can be done by either:

(a) constructing left and right turn lanes where there are not any at present; and/or

(b) increasing the east-west green time to the detriment of north-south traffic.

The latter solution would require closer examination of the merits and draw-backs of such an approach before a recommendation was made. The

consideration of minimum pedestrian crossing times would also have to be taken into account. Operational improvements, while being of benefit and worth persuing further, will only produce marginal results.

5.1.5 Highway 407

Highway 407 is an expressway that has been in the planning stage for approximately 30 years. Many different lane configurations and alignments have been proposed during that time. The current concept is for a basic six lane road with grade separated intersections and allowance for an ultimate eight lanes. The alignment is intended to go from Highway 410 (just south of Brampton) eastwards across to Highway 404. Ultimately, it is envisaged as linking with Highway 401 further west and east of this centre section. Its' function is to serve the burgeoning areas of Brampton and the Region of York. There is currently a strong east-west commuting pattern between Peel and York and Highway 7, Steeles Avenue and Highway 401 are all operating increasingly near to capacity with the situation bound to get worse as the industrial areas of Vaughan, for example, continue to develop. Highway 407 is therefore seen as relieving Highway 7 in particular, and Steeles Avenue and Highway 401 to a lesser extent. The latter would be relieved more when Highway 407 connects to Highway 401 either side of Metro, effectively operating as a by-pass for through trips. To estimate the effect Highway 407 might have on the west Metro boundary, the 2011 (base case) auto matrix was assigned to 2011 road networks with and without the centre section of Highway 407. The results of this exercise are summarized in Exhibit 5.3.

The table indicates that Highway 407 would relieve the west boundary by around 2,700 vehicles (5%) in 2011. The results show this relief to be experienced by Finch Avenue and Steeles Avenue in particular and only a slight relief to Highway 401. While the relief to individual roads has to be treated with caution due to the limited analysis so far carried out, the overall relief to the boundary illustrates the positive effect this highway

EXHIBIT 5.3

IMPACT OF HIGHWAY 407
ON SELECTED CROSS BOUNDARY LINKS

	Without Highway 407	With Highway 407	Difference
Steeles Avenue	2,080	658	-1,422
Finch Avenue	7,627	6,322	-1,305
Highway 401	8,605	8,347	-258
Total - West Metro Boundary	52,235	49,487	-2,748

would have. Highway 407 has no firm program date at the Ministry of Transportation and Communications, but is a serious contender for construction sometime in the next 20 years.

5.2 Eglinton West Rapid Transit

5.2.1 Background

The Network 2011 report states that the most likely scenario for the Eglinton West Rapid Transit (E.W.R.T.) line, is a busway opening in 2003 with an upgrading to either light rail or subway by 2011. Alternatively, if potential transit demand in the Eglinton West corridor materializes faster than anticipated, it is possible that a full rapid transit line could be justified by the turn of the century. If this were the case, only part of the line would be built initially, from Scarlett Road to the Spadina subway.

In response to the Network 2011 recommendations, the Region of Peel released an October, 1985 report entitled "The Urgent need for the Eglinton West Rapid Transit Line", which questioned the ordering of priority of the E.W.R.T. line behind the Sheppard and Downtown Relief lines. The Cities of Etobicoke and York have also questioned the ordering of the Network 2011 transit priorities and urge the E.W.R.T. be given a higher priority.

5.2.2 Rationale

The key arguments (from a Metropolitan perspective) put forward in support of the E.W.R.T. line are summarized as follows:

(a) provide relief to the Bloor Subway when capacity is reached;

(b) provide a transit bridge across the boundary in order to accommodate the 65-70% of trips that are not centrally oriented; and

(c) respond to a need to improve transit capacity at the boundary in lieu of increased road capacity.

To examine its performance in satisfying these objectives, the opportunity has been taken to review the forecasts of ridership on the Bloor subway and the E.W.R.T. at the boundary.

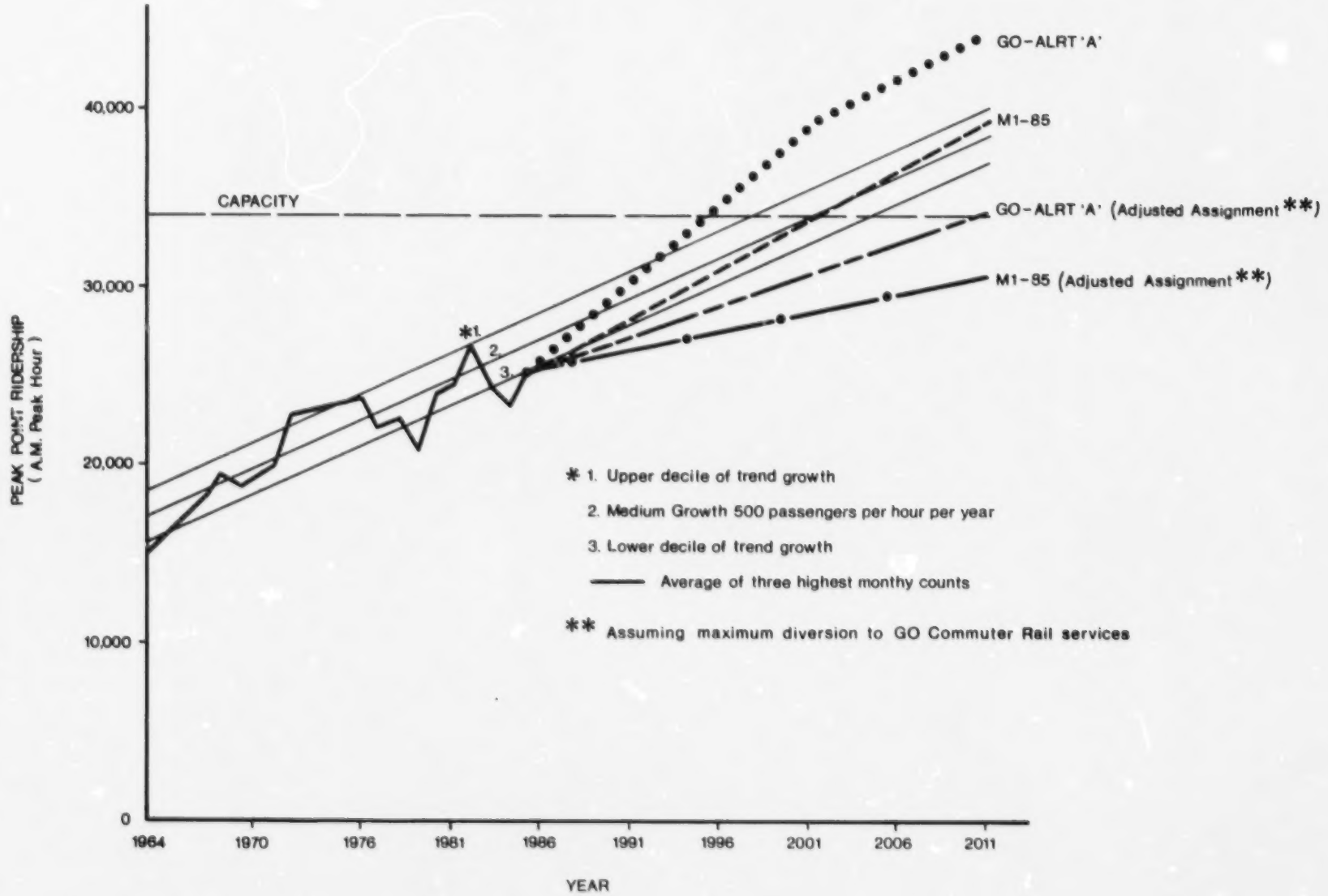
At this point it has to be noted that the Metro Travel Demand Model is essentially a two-mode model, the two modes being municipal transit (bus, L.R.T. and subway) and the private automobile. The GO Rail system is a different mode and cannot be modelled explicitly in the current version of the model, and it is felt the model runs conducted for the Network 2011 Study underestimate future GO Rail ridership. At the time the Network 2011 report was prepared, it was unclear as to what provincial plans were for GO Rail services. Since that time, the current government has announced the purchase of two additional trains for the Milton line and one train for the Lakeshore service. For this exercise it is assumed that a policy of incremental improvements in service to the Lakeshore, Milton and Georgetown GO Rail services will continue.

Based on this assumption it is possible to review the 2011 forecasts with respect to such a policy.

5.2.3 Bloor Subway Capacity

In the a.m. peak hour, peak point ridership on the Bloor subway occurs eastbound between Spadina and St. George. The D.R.T. study established the maximum practical capacity of a subway to be 34,000 passengers per hour per direction (pphpd). Exhibit 5.4 shows the trend in peak point ridership for the Bloor subway since 1966. The past trend is shown to be an increase of around 500 passengers per peak hour, per year. The exhibit also

EXHIBIT 5·4
BLOOR SUBWAY EASTBOUND, PEAK POINT RIDERSHIP, WEST OF ST. GEORGE



shows the 2011 forecast ridership from Metro's travel demand model as well as an extrapolation of past growth to give alternative forecasts. These forecasts show the subway to reach capacity at anywhere between 1996 (GO-ALRT 'A' land use) and 2004 (M1-85 land use). In order to narrow or confirm this range, a detailed analysis of the model forecast for 2011 was carried out. Select link matrices of passengers assigned to the subway at the peak ridership point were created. The implicit assumptions in this analysis are that GO Trains will be provided as demand arises and that no trade-off between cost and time would take place. This is likely to result in a maximum achievable GO Train ridership and not necessarily a scenario that would take place. However, as residential development in Mississauga is taking place near the Milton GO line (i.e. Meadowvale, Erin Mills) and some distance from Metro, the time penalty in a cost-time trade-off is relatively large.

Travel mode catchment areas were drawn based on the shortest travel time to major destinations in Metro from origins in Mississauga. Using these in conjunction with the select link matrices for both the Network 2011 and new Metro travel demand forecasts, revised peak point subway ridership forecasts were produced and are shown in Exhibits 5.4 and 5.5.

Exhibit 5.5 shows how, if GO Train services are increased to satisfy the forecast demand, the subway may not reach capacity until 2011.

The trend analysis (see Exhibit 5.4) which shows the same growth in the coming 25 years as the last 20 years is not a reliable method of forecasting in this case. The last 20 years' increase was due mostly to growth in Metro population. As Metro population will change little over the next 25 years, the main growth in Bloor subway ridership would be expected to come from the Region of Peel. The subway does not compete well (based on travel time) with GO Transit services for the longer inter-regional trips for most

Exhibit 5.5

REVISED FORECASTS FOR PEAK POINT

BLOOR SUBWAY RIDERSHIP

Land-Use	Previous Forecast	Re-Assignment to GO-Trains *			Revised Forecast**	"Seasonal Peak" Revised Forecast***
		Lakeshore	Milton	Georgetown		
GO-ALRT 'A'	37,876	1,501	4,671	1,796	29,908	34,394
M1-85	34,346	1,308	4,163	2,062	26,813	30,834

* Based on travel time comparison, no cost-time trade off allowance

** Revised forecast = Previous Forecast - Re-assigned trips to GO Trains

*** Revised forecast plus 15% factor to convert to T.T.C. 'average of 3 highest counts' statistic

origins within Mississauga. This is demonstrated by the fact that while cross-boundary travel increased between 1981 and 1984, Mississauga Transit passengers alighting at Islington Station between 6:00 a.m. and 9:00 a.m. has remained constant at around 3,100 while the Milton GO Train, opening in 1981, has shown continued ridership growth.

It follows that, although there is some uncertainty as to when capacity will be reached, expansion of GO Rail services would divert peak point inter-regional trips from the Bloor-Danforth subway. In this case, peak point subway capacity may not be reached before 2011. A case could be made that these revised subway forecasts may be low due to the forced modal split necessary because of limited roadway capacity. However, the forecast modal split is already quite high for trips from the west that could feasibly use the Bloor subway, and GO Rail appears to offer the best service for further increasing the modal split of these longer distance trips. The main opportunities for a forced modal split (as identified in Section 4.3.2 and discussed further in Section 6.2.4), are for the shorter distance trips where the forecast modal split is extremely low. Further, with integration of T.T.C. and Mississauga Transit fares, residual capacity at the western end of the line could be used for shorter distance trips destined to Etobicoke, by providing access to north-south T.T.C. bus services within Metro.

5.2.4 E.W.R.T. as a Transit Bridge

In reviewing the role of the E.W.R.T. line as a 'transit bridge' across the boundary it is necessary to review the forecast ridership in terms of numbers and distribution. A select link matrix of ridership on the E.W.R.T. at the boundary was created for the 2011 a.m. peak hour using the System 3 (Network 2011) network. The basic model assignment at this point is 11,129 passengers. Catchment areas within Mississauga were drawn up for each transit service (based on travel time) for specific destinations within

Metro. The E.W.R.T. line was found to be mostly uncompetitive with GO Rail for downtown destinations and competed well for trips originating in north central Mississauga destined to Metro north of St. Clair. However, for destinations north of St. Clair, areas in the north-west and north-east (Meadowvale and Malton) were better served by the existing GO Bus services. Based on these service catchment areas a manual re-assignment of the E.W.R.T. ridership forecast was carried out which produced the results shown in Exhibit 5.6. This analysis is similar to that carried out for the Bloor Subway forecast and again is likely a maximum diversion of passengers onto faster but not necessarily cheaper services.

This re-assignment shows a revised 2011 forecast of 5,475 passengers for the E.W.R.T. at the boundary. Of these, 433 are destined to the Airport and 1,568 to Etobicoke and could be served just as well by a re-orientation of existing Mississauga Transit/T.T.C. services. Other trips (1,240) to North York could be equally well served by new GO Bus services.

We now have a high and low ridership forecast for the E.W.R.T. at the boundary of 11,129 and 5,475. The high number is based on little or no improvement to GO Rail and no new cross-boundary bus services. The low number is based on the longer distance passenger choosing the fastest, but not necessarily the cheapest, transit services. To arrive at a smaller forecast range, other factors such as the introduction of new bus routes across the boundary and a detailed evaluation of overall travel times and costs of alternative services would be required. It is felt that a further rationalization of forecast ridership would result in a number nearer the lower end of the range rather than the upper. This is due to a combination of factors including:

- distribution of destinations within the Eglinton Corridor itself is not very great;
- no Eglinton cross-boundary transit service exists at present and therefore this has not been an attractive route for Mississauga residents;

EXHIBIT 5.6

MANUAL RE-ASSIGNMENT OF E.W.R.T. RIDERSHIP AT METRO BOUNDARY (NETWORK 2011, SYSTEM 3)

GO-ALRT 'A' Model Assignment		11,129
Re-assigned to:		
Milton GO-Train	2,118	
Lakeshore GO-Train	1,317	
Georgetown GO-Train	1,593	
Meadowvale GO-Bus	110	
Brampton GO-Bus	146	
Mississauga Transit	221	
T.T.C. - Bus	47	
T.T.C. - Subway	102	
Total Reassignment	5,654	
Revised E.W.R.T. Forecast		5,475

Note: Based on travel time re-assignment with no account for possible time-cost trade-offs.

- o the E.W.R.T. does not serve any major suburban employment concentrations in Metro. Its main connection is with the Toronto Central Area and GO Rail would provide better service to this area;
- o the Eglinton corridor does not have the development potential of other areas within Metro; and
- o other transit initiatives appear to address the problem more directly.

5.2.5 Forced Modal Shift

It can be argued that as the travel demand model largely over assigns the boundary roadways with auto traffic, commuters would be forced to make their journey by transit and hence transit demand forecasts are low. In reality, the lack of adequate road capacity would produce a number of related results:

(a) The projected land use pattern will not materialize;
(b) Trip distribution patterns will change, based on levels of transportation capacity;
(c) Trip making characteristics, such as peaking and auto occupancy will change; and
(d) Some forecast trips will be 'forced' to use transit.

The correct procedure in considering the 'forced modal shift' of these over-assigned auto trips is to carry out a sensitivity testing of other transit initiatives that could reasonably satisfy this auto travel 'desire' which is in excess of road capacity.

The auto trip making patterns that would not be satisfied by the addition of the E.W.R.T. to assumed bus routes (i.e. the System 3 network at the boundary), are primarily the shorter distance commuting trips, primarily to Etobicoke (mainly Rexdale and south Etobicoke). This unsatisfied demand is spread out at both the destination and origin ends making a forced modal shift to the E.W.R.T., or to any one rapid transit facility highly unlikely.

In the covering report submitting the Metro/TTC Rapid Transit Study (June 16, 1982), to the Economic Development and Planning Committee, the Technical Transportation Planning Committee, while discussing the forecast of auto travel across the West Metro boundary which could not physically be accommodated because of roadway constraints, stated:

> "While some of these projected auto trips could be expected to shift to an Eglinton transit line, the diversity of destinations suggests that many transit services will have to be improved and that a single rapid transit line may not be the answer."

The analysis carried out for this study confirms this previous conclusion.

5.2.6 E.W.R.T. Summary

In regard to the three stated objectives of the E.W.R.T. line (section 5.2.2) the following conclusions can be drawn:

1. the Bloor subway is unlikely to require relief prior to the year 2001;
2. it is not certain whether the E.W.R.T. line would provide a successful bridge to accommodate the 65-70% of non CBD trips as the Eglinton corridor contains only a small proportion of these trips at present;
3. the E.W.R.T. line increases capacity at the boundary but not necessarily where the current shortfall in capacity exists.

One aspect of the travel time comparison is the implied ridership potential on the Milton GO Rail Line, and the capacity requirements to meet this demand. This is discussed in Section 6.2.4.

The long range land use and travel forecasts used in this analysis contain a degree of uncertainty. While the E.W.R.T. line may be required at some point in the future to provide necessary capacity, the current analysis indicates that other services, particularly GO Rail, provide a superior level of passenger service in terms of travel time. Further, many of these services could be introduced incrementally at relatively low cost as

demand warrants. Given the significant degree of uncertainty with respect to land use, GO Rail initiatives and future agreements on service and fare integration, it is felt that the best approach to the consideration of the E.W.R.T. line (as recommended in Network 2011) is to review the situation every five years to determine whether the timing of such a facility needs to be brought forward or delayed. It must also be stated that this review has concentrated solely on the role of the E.W.R.T. line as a boundary relief line. No consideration has been given to the function and need internal to Metro. In particular, the a.m. peak ridership forecast immediately west of the Spadina subway is 17,000 (based on GO-ALRT 'A' land-use). With a downward revision applied similarly as to the boundary forecast, there still leaves an assignment of around 12,000 passengers which would mean the role of an Eglinton West transit facility within Metro may require further study.

5.3 GO Transit

5.3.1 Background

The introduction of the Lakeshore, Milton and Georgetown GO Rail services have been the chief reason the transit modal split at the west Metro boundary has increased over the past twelve years. Each train has the capability of carrying approximately 2,000 passengers by utilizing 10 bi-level cars. GO Bus services have also been successful in attracting an increasing ridership and supplementing the GO Rail services. With major increases in employment for Metropolitan Toronto being forecast (particularly in the Central Area) and the population increase expected to be in outlying regions (particularly Peel, where population is expected to double over the next 25 years), it is clear that the role of GO Transit in transporting people from home to work is likely to increase dramatically over the coming years. In the following sections an indication of the Ministry of Transportation and Communications future program, based on recent provincial announcements and discussions with M.T.C.policy staff, is given.

5.3.2 Lakeshore West GO Line

In October, 1985, the Minister of Transportation and Communications announced that an extra peak hour train in each direction would be added to the Lakeshore line early in 1986, extending the service to Burlington on normal workdays. This will be followed as soon as possible by expansion to full service to Burlington, making Burlington the western limit of core service rather than Oakville. The timing and costs of this extended service are not yet known, as CN have not yet completed their appraisal of the physical plant requirements. Based on tentative cost estimates, full service expansion into Burlington is targetted for 1993.

For services beyond Burlington, M.T.C. has initiated discussion with municipal officials in the Hamilton area with regard to future expansion of GO Rail service into Hamilton. CN and CP have been commissioned by GO Transit to identify their requirements for GO Transit occupancy of their corridors for various concepts of service. When the Railways have completed their appraisal in the near future, M.T.C. will initiate a feasibility study for the extension of GO Rail service into Hamilton.

While these improvements increase service to the west, they do not increase Lakeshore West GO Rail capacity at the boundary. Assuming the stated extensions to be first priority, it would appear that Lakeshore West capacity improvements will not be introduced prior to 1993.

5.3.3 Milton GO Line

In the same October, 1985 statement, the Minister announced that by 1988, two additional peak period trains would be added in each direction to the current Milton-Streetsville GO Rail service. Proposals are under consideration for further expansion of the Milton line services which cover a wide range of service levels. No firm proposals are at hand at present. Nevertheless, the short-term improvements should greatly increase the

Milton GO market potential due to both the peak period capacity improvements and the additional travel choice flexibility afforded potential riders.

5.3.4 Other GO Rail Services

The Georgetown line, which crosses the west Metro boundary in north Etobicoke, is one of several lines (including Bradford, Richmond Hill and Stouffville) where system service expansion alternatives are being considered by the M.T.C. and GO Transit. The studies are very preliminary at this stage and no information is yet available.

5.3.5 GO Bus Services

GO Bus services attempt to fill the gaps in inter-regional travel demand which GO Rail cannot fulfill. In considering future GO Bus services it is worthwhile attempting to target particular markets in cross-boundary travel that are not adequately served by transit at present. Potential markets include employment concentrations in the Downsview area, the North York Civic Centre, Yonge/York Mills, the Eglinton Intermediate Centre and other employment concentrations on the Yonge line via a subway connection.

These areas are already well served from the Meadowvale and Malton areas by GO Bus services. If similar GO Bus services were commenced from the Square One area (along Highway 401 and Highways 10 or 403) this would actually provide a faster service to these Metro centres than would the E.W.R.T. line. Such a service would have a greater potential catchment area, in the denser residential area of Square One, than the Meadowvale or Malton services offer.

5.4 Fare and Service Integration

The Regions around Metropolitan Toronto are growing to the stage where the Greater Toronto Area is acting as a contiguous community having an interdependance and interaction over a widening area. Regional and municipal jurisdictional boundaries within this area produce discontinuous and unattractive transit services and, hence, high auto usage across these boundaries and are a major cause of the apparent boundary problem.

There are large metropolitan regions in other parts of the world that have implemented varying fare and service integration schemes. A recent report [1] outlined the principal results from such implementation in cities such as London, Tyne and Wear (England), the Netherlands, Rhine Ruhr (West Germany), Munich, Perth, San Francisco and San Diego. These findings included:

- o principal objective was efficiency of service and passenger convenience;
- o fare equity (based on distance travelled and level of service) was seen as an important issue;
- o despite radical changes to fare structures passengers readily adapted to these changes;
- o virtually all systems led to steady ridership increases.

In certain areas of the Greater Toronto Area, fare integration has been implemented jointly between regions/municipalities and GO Transit. To date this demonstration has included six participating local transit systems in Burlington, Oakville, Brampton, Mississauga (partial), Pickering and Richmond Hill (partial). As indicated in Exhibit 5.7, the impact of full fare

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1. Transit Fare Integration in the Toronto Area - Phase II; MTC/IBI - March, 1985

EXHIBIT 5.7

IMPACT OF GO TRANSIT FARE INTEGRATION

	STATION	LOCAL BUS ACCESS (%)	
		1981	1983
FULL FARE INTEGRATION	BRAMPTON (79)	20.3	29.7
	PICKERING (83)	6.9	21.7
	OAKVILLE (80)	28.8	41.5
	TOTAL	17.6	30.7
PARTIAL FARE AND/OR SERVICE INTEGRATION	RICHMOND HILL (83)	0.9	2.8
	PORT CREDIT (81)	10.2	15.8
	MALTON (81)	3.2	2.9
	MEADOWVALE (81)	--	13.6
	TOTAL	8.8	13.6
NO INTEGRATION	SCARBOROUGH	0.9	2.3
	GUILDWOOD	1.7	3.9
	TOTAL	1.5	3.4

NOTES:

(1) (79) indicates 1979 was the year of implementation of fare integration.

(2) 'Partial Fare and/or Service Integration' indicates a reduction in the local transit fare.

(3) 'Full Fare Integration' indicates GO Transit pre-paid fares are accepted as valid fare payment on local transit connections.

(4) Taken from March, 1985 M.T.C./I.B.I. report, Transit Fare Integration in the Toronto Area - Phase II

and service integration, as indicated by the growth in local bus access to GO Rail stations over the two year period 1981 to 1983, was quite dramatic. This can be contrasted with the results of partial fare and/or service integration and those which have no fare or service integration. There is no available data to show whether fare integration has had a direct effect in increasing the usage of GO Transit services. GO Transit ridership has increased steadily over the years, and it is not possible to isolate the effect of fare and service integration, as so many other factors influence ridership levels.

Clearly, GO Transit has demonstrated the potential impact of fare integration on the shift from auto to transit for the access mode. Thus, there is both an opportunity and a need to more fully integrate the local and regional services serving cross-boundary trips.

It has already been shown that the general pattern of Metropolitan destinations for commuters crossing the west boundary is divided equally between Etobicoke, downtown Toronto and the rest of Metro and that the numbers crossing the boundary will increase in the future with the distribution of destinations staying more or less the same. A blanket fare and service integration between GO Transit and T.T.C. could have localized detrimental effects, such as GO passengers transferring to a T.T.C. route that is already crowded. Therefore, integration has to be selective, at least initially. There are numerous potential applications of fare and service integration that could improve service for a large percentage of these three identifiable cross-boundary markets. These applications include:

- fare integration between GO Transit and the T.T.C. at Union Station (and other GO Rail/T.T.C. subway interchanges such as Kipling and Dundas West);
- fare integration between GO Bus and T.T.C. services in Etobicoke and North York; and

- o fare and service integration across the boundary between T.T.C., Mississauga Transit and Brampton Transit which has direct and indirect benefits for Etobicoke.

The latter will be dealt with in Section 5.5. The location at which fare integration has the greatest potential benefit is Union Station. It is the terminal point for all GO Trains and there is already a reasonable physical integration with the Yonge/University subway.

The 1983 GO Transit passenger survey found that 34% of outbound passengers taking the Lakeshore West GO Train used the subway to get to Union Station, illustrating the subsequent dispersion of people outside of the downtown core. Passengers using the westbound GO Service had origins as distant as Finch Avenue.

The main advantage to the T.T.C. of integration at Union Station is that it utilizes spare capacity on the subway in the off-peak direction, both morning and evening. Depending on the fare compensation arrangement agreed to, additional T.T.C. revenues may be generated without any additional service requirements or operating costs. The advantages to GO Transit are that it provides a more attractive service and would have the effect of appealing to commuters that do not have a downtown destination, but do have a destination within easy reach of the subway system.

With the anticipated future increase in GO Rail ridership alighting at Union Station it may be necessary in the future for passenger access between the two services to be improved, which would mean a redesign of pedestrian facilities in the station. The net benefit of fare and service integration at Union Station for the west boundary is that it makes GO Rail service much more attractive and would undoubtedly increase the modal split, particularly for commuters with destinations beyond easy walking distance of Union Station.

Another area of integration worthy of investigation, to help increase the modal split for commuters with Etobicoke destinations, is the consideration of fare integration between GO Transit (train and bus) and T.T.C. services in Etobicoke. However, fare concessions at Kipling station between GO Transit, Mississauga Transit and the T.T.C. for downtown destinations could cause the subway to reach capacity at an earlier date and detract from improved GO Rail services. The impacts of such integration would require further analysis prior to implementation.

5.5 Municipal Transit

5.5.1 Background

The existing Mississauga Transit bus services crossing into Metro are aimed mostly at serving the Bloor subway. A survey of passengers using these services, carried out in 1981, found that the great majority of Mississauga bus passengers had a downtown destination. It can be seen that these services are, to a certain extent, competing with GO Transit for downtown destined commuters. With the possibility of gradual introduction of full service on the Milton GO Raiil line, the competitiveness of these Bloor subway connections will decrease (due to greater travel time) for the majority of Mississauga residents, particularly as housing development is ocurring mainly in west and north-west Mississauga (i.e. further away from the subway and nearer to GO Rail services).

5.5.2 Service Rationalization

As there are limited opportunities for improving road capacity at the boundary, ways must be found to increase the modal split in favour of transit by identifying potential markets and providing an attractive service to cater to the demand. As Exhibit 4.10 illustrates, 43% of all vehicles entering Metro from the west will likely have a destination within Etobicoke and, although not without operational difficulties, these trips are

an obvious transit market to aim at. Of cross boundary trip making, Etobicoke destined trips also have the highest auto use percentage because, as previously mentioned, the majority of cross-boundary Mississauga Transit services are aimed at serving the subway. This is shown by the fact that the cross-boundary Mississauga Transit services are providing for approximately twice the proportion of trips to Toronto as to Etobicoke even though there is the same propensity to travel to either destination. Exhibit 4.11 illustrates the distribution of forecast peak hour trips that would not be satisfied by the existing configuration of transit services. It can be seen that there is a clear concentration of destinations in the Rexdale/Airport area and another in southern Etobicoke, south of Bloor Street. These are large employment areas where transit services could be directed. As a gauge of travel demand along the Eglinton corridor (keeping in mind the E.W.R.T. proposal), one such service could be commencement of a bus service(s) along Eglinton. Currently, Mississauga Transit operates only a rush hour service (1 bus per hour) along Eglinton, between Square One and the Airport. Results from the 1986 Census travel data, when available, could be utilized to identify bus routes worthy of early implementation.

5.5.3 Municipal Fare and Service Integration

One difficulty in identifying transit markets in Etobicoke is that Etobicoke is a long (north-south), narrow area which would not be served well by one high capacity east-west transit service. The destinations within Etobicoke are fairly well spread out so that only introduction of an integrated system along the whole boundary would likely be successful. A concessionary single fare system would also be needed to make the operation more attractive.

The benefits of municipal fare and service integration in Etobicoke would be several:

- o increased modal split and hence reduced pressure on the road system;
- o more frequent transit service near the boundary to benefit Metro residents;
- o possible increase of transit usage from the west to destinations east of Etobicoke that are not centrally oriented (e.g. York, North York).
- o better transit service for Metro residents working in Mississauga.

The revenue and operating cost implications to the T.T.C. are not clear and would have to be taken into account when negotiations are undertaken. The M.T.C. would have to take a lead role in discussions between Mississauga Transit and the T.T.C. to enable an equitable model to be found. Local fare and service integration has a significant potential for major positive impact on the boundary problem in that it addresses a largely untapped transit market.

5.5.4 Operational Considerations

The lack of opportunity for widening roads or introducing new links has been discussed in Section 5.1. This being the case, it can be anticipated that as cross-boundary commuting by auto approaches the saturation point, bus services will also slow down and become less attractive. As well as the implementation of fare and service integration across the boundary, it is clear that measures to help bus operations will also be needed. A monitoring of bus operating speeds would be required and when necessary, the implementation of priority measures such as bus lanes and/or bus activated traffic signals should be considered wherever possible.

5.5.5 Express Busway from Mississauga Centre to Kipling Station

The feasibility of alternative transit routes and modes between Mississauga City Centre (Square One) and the Bloor subway (Kipling station) was investigated in a joint Provincial/Municipal study completed in March 1985.

Such a link would serve primarily the Kipling/Islington Centre and the Toronto Central Area. When comparing travel times to downtown Toronto by GO Rail and by this busway/subway link, it is apparent that it is faster by GO Rail for all origins within Mississauga. This is also true for destinations on the subway lines north of the downtown area. The service advantages of this link for downtown destined commuters might not be realized if full service is implemented on the Milton GO Rail line. Whether such a link could be justified for commuters from Square One to the Kipling/Islington Centre and other areas served by the Bloor subway is uncertain.

The busway connection to the Bloor subway is seen as an interim solution. When the Bloor subway at St. George reaches capacity, the busway would then be connected to a newly constructed E.W.R.T. line to provide the necessary relief to Bloor. This busway to Bloor, if successful in attracting ridership, could create a near term capacity deficiency on the Bloor subway, and necessitate early construction of the Eglinton line. However, if the busway connection to Bloor is not made in the first place (assuming Milton Go Rail service is upgraded to cater to downtown destinations), the need for an E.W.R.T. line is not so urgent, as analysis shows it is possible the Bloor subway may not reach capacity prior to 2011, if it is assumed GO Rail services provide adequate capacity for the downtown destined commuter.

Nevertheless, the Mississauga Busway could be implemented on an interim basis by operational testing of express bus services (with or without reserved lanes) via Highway 403/Eglinton and Highway 427 to Kipling Station. As full GO Rail services are improved, the need for a grade-separated busway, with respect to demand not catered to by the GO Trains, could be more accurately assessed.

5.6 Bloor Subway Extension

Extension of the Bloor subway to the Sherway Gardens area by tunnelling under the C.P. Rail track would cost over $300 million. By staying at-grade north of the C.P. Rail track, the cost would be in the region of $100 million. The advantages of a subway extension for Metro residents would be more indirect than direct. There would be some service advantages for T.T.C. buses in having another subway station to orient services towards, including express buses down Highway 427 or up Brown's Line to serve north and south Etobicoke. There would be little increase in ridership and an increase in T.T.C. operating costs. The benefits are summarized below:

1. Mississauga buses accessing the subway could do so using Dundas Street and the Queensway only and hence relieve the residential areas of Burnhamthorpe and Bloor.

2. Similarly, park'n'ride passengers would be more likely to access the subway from the Queensway or Dundas.

3. Overall journey time for Mississauga residents into downtown would be reduced slightly by 2-4 minutes.

4. The Westwood Theatre site could possibly be freed for development if an area of land can be found near the boundary (or elsewhere) for future T.T.C. storage yards. This area is currently used primarily by trucking firms and although more or less a compatible land-use, these firms could find it difficult to relocate to a similar area with such good inter-modal access.

5. Congestion at the Kipling/Islington Centre would be reduced, thus freeing up capacity on the road system which could be utilized to support additional development.

Relative to other potential solutions to improve cross-boundary travel, this is a rather high cost solution for the benefits attained as it does not increase transit capacity at the boundary. The result is a tendency to direct subway bound commuters away from some residential streets, and to bring the subway closer to Mississauga. As this scheme would tend to benefit Mississauga as much as Metro, the province may be persuaded to contribute more funds for what is, in effect, an inter-regional project. The main drawback is that it would also tend to compete with GO Transit initiatives as the subway terminal would be close to the Dixie Go Station on the Milton line. A subway corridor north of the C.P. tracks might also be needed for future GO Rail tracks.

A low cost alternative to this scheme, which gives some of the same benefits, would be to ensure Mississauga buses access to Kipling station via only the Queensway (which is a high capacity arterial road) and Dundas Street (widened to include exclusive bus lanes). This would again give relief to Bloor and Burnhamthorpe.

As well as cost, a major disadvantage to the notion of extending the subway to Sherway Gardens is that no increase in capacity is provided at the boundary. Autos and buses would still have to cross the boundary to access the subway. An alternative that would remove these two disadvantages, but further increase the capital cost, would be to extend the subway across the boundary into Mississauga, providing additional capacity across the boundary and further reducing auto and bus travel across the boundary by relocating park'n'ride and bus terminal facilities in Mississauga. Residential streets in Etobicoke would subsequently be relieved of many Mississauga buses and the Kipling/Islington centre would then be served by subway from Mississauga rather than by bus. The disadvantage of this scheme is that, without an equitable fare structure (i.e. payment in proportion to distance travelled), there could be a tendancy for a cost/time trade-off (when compared to the faster but higher cost GO Rail services) for centrally oriented trips which would result in capacity east of St. George being reached at an earlier date. The removal

of some bus and parking facilities from Kipling/Islington could also facilitate additional development in the intermediate centre. The feasibility of a Bloor subway extension into Mississauga is dependent largely on the extent to which improved GO Rail services divert longer-distance trips from the Bloor line and should possibly be considered further in a future review of the West Metro boundary.

5.7 GO-ALRT Northern Section

The Provincial Government announced, in late 1982, the commencement of studies to investigate suitable corridors for the long term implementation of an inter-regional rapid transit service connecting Oakville, Mississauga City Centre, Pearson International Airport, North Etobicoke, North York City Centre, Scarborough City Centre and Pickering. This initiative was known as "GO-ALRT Northern Section".

The Provincial study objective was to identify a a suitable corridor to be protected for future implementation of a rapid transit technology (GO-ALRT), being developed by the U.T.D.C. especially for the concept. The notion of using the GO-ALRT technology has since been abandoned. However, the concept of providing a continuous inter-regional rapid transit facility remains a valid objective. The results of the study have not been published, however, preliminary analysis indicated a preferred alignment essentially following Highway 403 in Mississauga, the Finch Hydro right-of-way across north Metro and Highway 401 east of Scarborough City Centre. Approximately 90% of the recommended alignment is on right-of-way under provincial jurisdiction, facilitating protection of the corridor.

The recommended alignment from Mississauga City Centre to the Metro boundary along the Highway 403/Hydro corridor is the same one now recommended in the Mississauga Transportation Study to form a continuous line with the E.W.R.T.in Metro. The recommended option for GO-ALRT in North Etobicoke was northwards along the west side of Highway 427 to

north of the Airport and then eastward along Finch Avenue. An alternative route which did not serve the Airport directly, but gave better access into Rexdale was along Highway 27.

The forecast ridership [1] for the GO-ALRT Northern Section eastbound at the West Metro boundary was between 5,000 and 8,000 passengers in the 2011 a.m. peak hour, a relatively low estimate with which to justify the high capital costs of rail technology. The idea of a rapid transit line from Mississauga through North Etobicoke and North York has the following merits with regard to relieving boundary auto demand:

- the Airport and Rexdale areas (forecast to be the destination for 12% of total cross-boundary travel by Mississauga residents) are growing employment centres for residents of Peel;

- North York (north of Highway 401) is also an area of significant employment for residents of Peel (10% of total forecast cross boundary travel by Mississauga residents is destined to this area);

- the GO-ALRT corridor may provide an alternative routing for a future rapid transit link from Mississauga by linking to the proposed Sheppard Avenue subway;

- the route would provide a new transit service linking the developing areas of Rexdale, North York and Scarborough, with the possibility of encouraging re-development of the Downsview airport area.

The need for such a rapid transit link is not demonstrated in the short term. However, the merits of this concept, as listed above, make the route worthy of consideration in the future.

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1. Source: GO-ALRT Northern Section, Travel Demand Sub-study - Tranplan, Read, Vorhees, December, 1985.

6.0 CONCLUSIONS AND RECOMMENDED STRATEGY

6.1 Introduction

Section 4.0 identified the travel patterns across the West Metro Boundary, the current and future pressure points and the possible target areas to aim for in capturing a larger transit share of cross-boundary travel. Section 5.0 discussed the merits of various proposals for both roads and transit.

This section will tie together the discussion in these previous two sections and will identify the most appropriate strategies to alleviate pressure on the road system in the short and long term. In section 3.0, the risk involved in long term forecasting was pointed out. This has implications for identifying the need for and timing of major infrastructure in the long term. In identifying short term solutions, the long term problem has to be kept in mind so that any short term solution is not incongruent with long term requirements. It is, therefore, appropriate to identify the most promising long term solutions in the first instance and then examine how these recommendations tie in with short term requirements.

6.2 Long Term Solutions

6.2.1 Roads

The long term problem has been identified as primarily an intensification of the current problem. The roads between Dundas and the Lake are likely to experience the greatest increase in demand as compared to the rest of the boundary. Road improvements can be more easily implemented in the northern section than the southern section of the boundary, thus compounding the problem in the south and keeping it as the main focus of attention.

Section 5.0 identified few opportunities to increase road capacity. The most likely opportunities are the widening of Eglinton Avenue (Screenline 2) and Steeles Avenue (Screenline 3) on both sides of the boundary, Dundas Street and The Queensway (both Screenline 1) on the Mississauga side, and Finch Avenue (Screenline 3) on the Metro side. Making Rathburn Road continuous across the boundary is a contentious scheme but would be a valuable extra link to relieve Burnhamthorpe and Bloor. Construction of a link to the Airport from Highway 401 in Mississauga, (Screenline 2) is a possibility. Marginal improvements at the Queen Elizabeth Way are also possible. It is then worth looking again at the forecast volume/capacity ratios for 2011 with reasonably expected improvements included (see Exhibit 6.1). This is shown graphically for Screenlines 1 and 2, combined, in Exhibit 6.2. A screenline analysis of this nature tends to hide any localized deficiencies of particular roads. Conversely, a further spreading of peak period travel, which is likely under near to capacity conditions, would reduce the shortfall somewhat. Exhibit 6.2 shows the uncertainty regarding the magnitude of the future problem for Screenlines 1 and 2. It must to be remembered that there is a potential bus capacity across this section of the boundary on all arterial roads (assuming 1 minute bus frequency) of approximately 10,000 passengers per hour that could be applied to meet the shortfall in roadway capacity. The current bus services are providing for a maximum ridership of around 3,000 passengers in the peak hour.

The results in Exhibit 6.1 show Screenline 1 to be largely over assigned, indicating total travel demand would not be catered to without transit initiatives. It can be concluded that all the feasible improvements to roads across the boundary will be required by 2011, regardless of land use forecasts. The timing and need for those not identified in the short term requirements (see section 6.3.1) would need to be determined at some future time when need becomes more apparent.

EXHIBIT 6.1

FORECAST EASTBOUND ROAD TRAFFIC VOLUMES (P.C.U's) AND FUTURE VOLUME/CAPACITY RATIOS

Screenline	Reasonably Expected Future Road Capacity *	2011 GO-ALRT 'A' Base Case	2011 M1-85 Base Case
1 Dundas to the Lake	17,615	26,370 (1.50)	21,965 (1.25)
2 Bloor to Highway 401	19,250	19,263 (1.00)	16,480 (0.86)
3 Airport to Steeles	15,650	13,913 (0.89)	13,883 (0.89)
Total	52,515	59,546 (1.13)	52,328 (1.00)

* Capacity Includes:

For Screenline 1. widening of Queensway and Dundas on Mississauga side and the continuation of QEW service roads to Evans Avenue ramps.

For Screenline 2. widening of Eglinton on both sides of the boundary

For Screenline 3. widening of Airport Road (west of American Dr.), Steeles Avenue and Finch Avenue

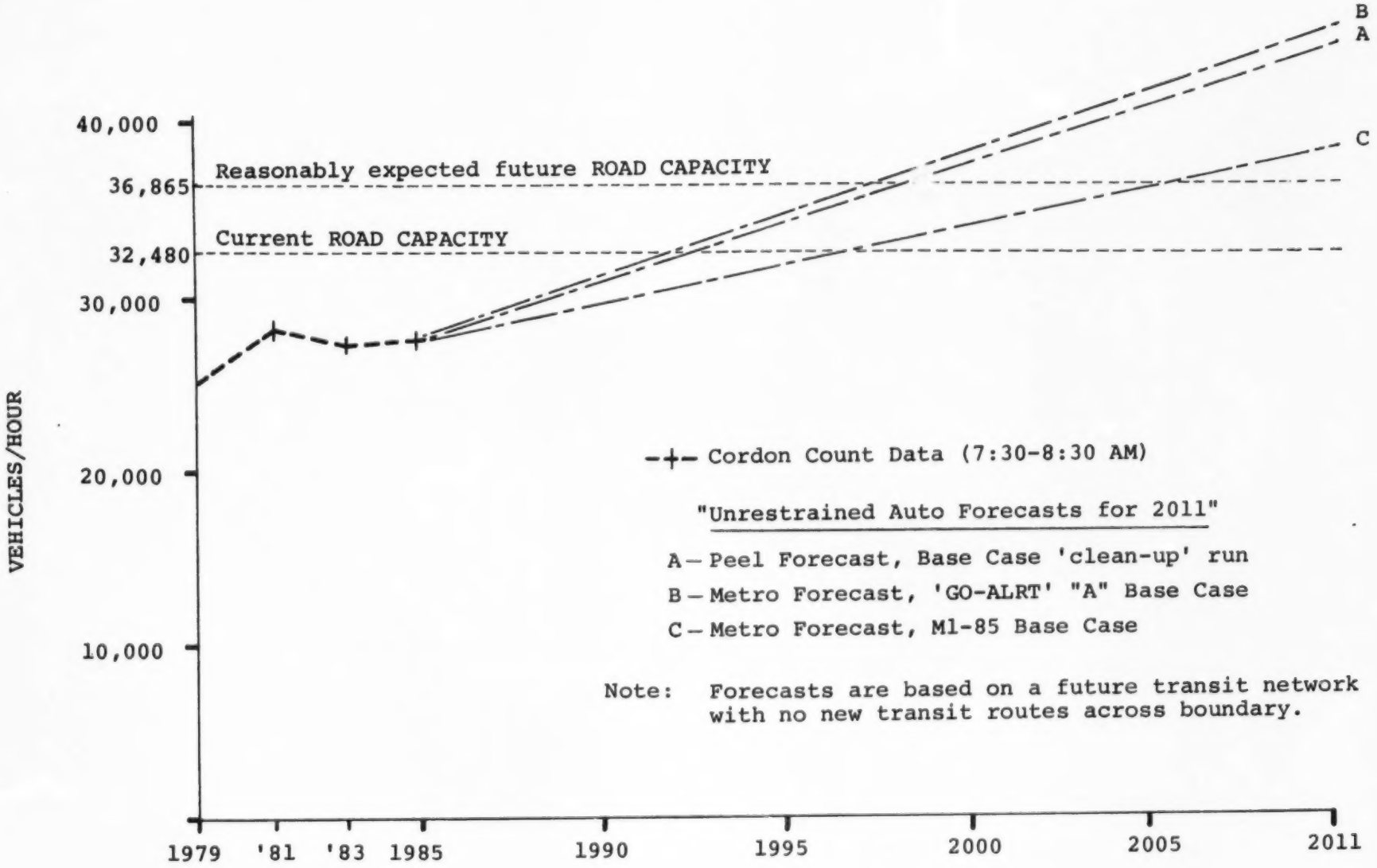

EXHIBIT 6.2 A.M. PEAK HOUR EASTBOUND AUTO FORECASTS (P.C.U.'s) AND CAPACITIES ACROSS THE WEST METRO BOUNDARY (Hwy 401 to Lake, Screenlines 1&2)

6.2.2 Transit

The previous section identifies a shortfall in roadway capacity for 2011 even when all the feasible road improvements have been implemented. Transit solutions for each screenline will be reviewed to determine which have the best chance of influencing a favourable transit modal split. In order to reduce risk, any transit solution must aim at the major destination areas of autos crossing the screenline.

Screenline 1 - Dundas Street to the Lake

Screenline 1 presents the largest problem, in that there is a forecast increase in travel demand of between 50% and 64% between now and 2011. However, Section 4.3.3 identified 69% of the auto travel demand as being destined to two distinct destinations: Etobicoke (50%) and Downtown Toronto (19%). Of the remaining 31%, the trips are either too long a distance (e.g. Scarborough/York/Durham (8%)) for transit to compete with the auto, or a combination of too dispersed (rest of Metro 14%) and too long to be served directly by transit. However, if transit solutions are aimed at improving access to Etobicoke and North York, access for a good proportion of these 'Rest of Metro' trips would be improved, e.g. to P.D.3, immediately east of Etobicoke and south of Highway 401, and P.D.4, immediately north of P.D.1 and south of Highway 401.

Transit services/strategies which would cater for this travel at this Screenline include:

Service/Strategy	Areas Served
Fare and Service Integration (GO/Mississauga/T.T.C.), plus new municipal transit services directly into the industrial areas of south Etobicoke.	Etobicoke, primarily, and other areas immediately adjacent to Etobicoke (i.e. around 60% of demand)

Improved service on Lakeshore and particularly Milton GO Rail services/Fare integration at Union Station.	Downtown Toronto (P.D.1 and P.D.4) (i.e. around 24% of demand) and, to a lesser extent, south Etobicoke
Improved Lakeshore GO Bus service/Fare integration withT.T.C.	Etobicoke, primarily, and Toronto

Screenline 2 - Highway 401 to Bloor Street

For Screenline 2, there is some uncertainty as to the extent of road capacity deficiency. The new travel demand forecasts (M1-85) show little increase (5%) in travel demand across the screenline, thus presenting no real future road capacity problems. If the Network 2011 forecast of demand (22% increase) is correct there is likely to be an increased demand, particularly on Highway 401 and Eglinton, as Burnhamthorpe and Bloor are mostly developed. Section 4.3.3 again identified Etobicoke (32%) as the main destination for autos crossing this screenline, followed by North York north of Highway 401 (18%). The remaining 50% are distributed more widely including 15% to Scarborough/York/Durham (i.e. long distance and therefore largely auto dependant). Certain of these 'other trips' would be catered to, somewhat, by initiatives to serve the Etobicoke destinations. Transit services/strategies that could be directed at these main destinations include:

Service/Strategy	Areas Served
Fare and Service Integration (GO/Mississauga/T.T.C.) across boundary, plus new services directly into the Airport/Rexdale areas from Peel	Primarily Etobicoke and the Airport; secondly, other areas immediately adjacent to Etobicoke (i.e. around 40% of demand)

GO Bus services to serve North York directly	Downsview and North York Civic Centre primarily; York Mills, Eglinton Intermediate Centres secondly (i.e. about 20% of demand)

Screenline 3 - Steeles Avenue to Airport Road

Screenline 3 is forecast to experience traffic growth over the next 25 years that could feasibly be handled by road improvements and moderate transit initiatives. The major travel demand at this screenline, in any case, is forecast to be westbound in the a.m. peak hour and sufficient road capacity appears to be available, particularly as Highway 409 provides more of a westbound function (and hence capacity) than eastbound.

Should transit initiatives be undertaken to relieve eastbound travel in the future, Section 4.3.3 identified the major auto destinations and potential transit markets as being Etobicoke (43%), the Toronto Central Area (7%), North York north of Highway 401 (15%) and the Airport (6%). These destinations make up 71% of the total screenline auto volume and if a moderate switch to transit usage could be achieved by improving services to these areas. the roadways have a chance of handling the remaining traffic at an acceptable level of service.

Transit services/strategies so far identified that would cater for these identified work place destinations include:

Service/Strategy	Areas Served
Fare and Service Integration (GO/Brampton/Mississauga/T.T.C.) across boundary, plus new services directly into the Airport/ Rexdale areas from Peel. (particularly Brampton Transit)	Primarily Etobicoke and the Airport, secondly, other areas immediately adjacent to Etobicoke (i.e. around 60% of demand)

Improved service on Georgetown GO Train/Fare integration at Union Station (GO/T.T.C.)	Downtown Toronto (P.D.1 and P.D.4) (i.e. around 10% of demand) and Etobicoke.
GO Bus services; increase frequency of existing services/Fare integration with T.T.C. in North York.	North York including Downsview, and North York Civic Centre, York Mills and possibly Yonge/Eglinton Centre (i.e. around 15% of demand).

Any municipal transit initiatives across this screenline would originate from Brampton or Malton, as these two origins constitute 65% and 26% respectively of all a.m. peak eastbound traffic across Screenline 3.

6.2.3. Summary of Long Term Proposed Improvements

The proposed improvements aimed at relieving all three screenlines at the West Metro boundary are consistent, due to the problem at each screenline having a similar make-up, particularly with respect to short distance commuting across the boundary. The total package of potential 'best' solutions thought to have the greatest impact, and thus a good chance of succeeding, are summarized below:

1. The following boundary road widenings carried out when necessary:
   - Queensway (Mississauga side only)
   - Dundas Street (Mississauga side only)
   - Eglinton Avenue
   - Airport Road (Mississauga side only)
   - Finch Avenue
   - Steeles Avenue

   Construction of new road links:
   - Highway 407
   - Airport/Highway 401 (and/or 403) connection

Further study to investigate the feasibility of constructing additional links or making other improvements, including:

- widening of Lakeshore Boulevard and/or intersection improvements at Brown's Line;
- improvements to the Q.E.W. and/or its service roads
- continuation of Sherway Drive across the boundary;
- North Queen Street connection to Dixie Road;
- completion of Rathburn Road across Etobicoke Creek
- consideration of initiatives to redirect traffic from the more congested southern parts of the boundary by consideration of improved north-south links in Mississauga and possible new east-west connections.
- consideration of improving intersections east of the boundary.

2. Incremental improvements to the three GO Rail services: Lakeshore, Georgetown and particularly the Milton line.

3. Selective fare and service integration across the boundary between GO Transit, Mississauga Transit and the T.T.C. Additional cross-boundary routes to serve areas of high employment in north and south Etobicoke.

4. Fare Integration between GO Transit and the T.T.C. at Union Station.

5. Identification of markets for new GO Bus services.

6. Operational improvements to intersections - where possible including the consideration of transit priority measures.

Due to the different roles played by expressways and arterials, the GO Transit recommendations would tend to relieve the Q.E.W. and Highway 401 while the municipal transit strategies would benefit the arterial roads.

The other major capital investments currently under consideration, namely the E.W.R.T., the rapid transit connection to Mississauga City Centre and the GO-ALRT Northern Section concept have been identified as possible long-term requirements but involve a great deal of risk if considered for implementation in the near future, as they would not appear to address the main boundary capacity problems. The best possible approach in this case is to protect the appropriate corridors until such time as the need for these facilities can be more effectively assessed, and in the meantime initiate operational tests of bus services along parallel routes to determine more accurately the potential demand.

6.2.4 Assessment of the impact of the proposed improvements

In order to gain an idea of how successful the recommended strategies might be in coping with the forecast increases in travel demand, and also to gain an impression of the impact on future transit operations, a manipulation of the travel demand forecasts was carried out to assess the possible impact of the long term strategies. This is, in fact, an attempt to identify the potential 'forced modal split' expected due to the limited number of future road improvements.

In order to address the service requirements on the GO Rail lines, a rudimentary process was undertaken to attempt to eliminate the underestimation of ridership inherent in the modelling process. This involved two stages:

- adding to the forecast GO Rail ridership the passengers re-assigned from the Bloor subway. (See Exhibit 5.5)

- examining the modal split for P.D.1 and P.D.4. destinations from Peel and Halton and making reasonable adjustments to allow for a realistically achievable transit modal split.

The forecast modal splits from Peel and Halton to Metro are shown in Exhibit 6.3. This shows a range of between 59.3% (Milton) and 78.1% (Oakville) to P.D.1., and a range of between 19.0% (from Milton) and 45.5% (from Central Mississauga) to P.D.4. This indicates an unreasonably low modal split from Milton, for example, and reflects the poor municipal transit access to downtown Toronto rather than the direct GO Rail services. In order to make a rough assessment of potential modal split, it is assumed the higher number to each of the two zones (78% to P.D.1 and 45% to P.D.4) can be attained for each of the origins from Peel and Malton. This would give a re-assignment from road to GO Transit as shown in Exhibit 6.4.

These forecasts, based on a 'hand re-assignment' must be treated with caution and taken as only a general indication of demand. The results indicate sufficient demand for a 10 minute service frequency on the Milton line and a 20 minute frequency on the Georgetown line. The demand forecasts are for a high growth scenario (GO-ALRT 'A') for the year 2011 and may be optimistic, nevertheless, they do indicate the potential of the Milton line.

In order to gauge the potential 'forced modal split' for short distance commuting into Etobicoke from Peel, Oakville and Milton, a comparison was made of the forecast transit modal splits from origins east of Etobicoke to those of origins west of Etobicoke. Exhibit 6.5 shows this comparison and how a higher modal split (21.5% to 32.0% as compared with 10.2% to 13.6%) is forecast from the east where there is not a jurisdictional boundary for municipal transit. Achievement of a similar modal split from the west, would reduce the number of peak hour vehicles crossing the boundary by around 4,800. A further reduction in auto travel could be achieved for commuting to other Metro destinations with a policy of fare integration, although the main benefits would be more likely to be achieved for the shorter distance trips into Etobicoke.

EXHIBIT 6.3

2011 A.M. PEAK HOUR MODAL SPLIT FORECASTS

From/To	P.D.1	P.D.2	P.D.3	P.D.4	P.D.5	P.D.6	P.D.7	P.D.8	P.D.9	P.D.10	P.D.11	P.D.12	P.D. 13-16
P.D.21	852	162	316	148	115	53	696	1,127	483	315	124	43	178
(Mississauga	3,311	270	352	240	129	104	804	1,253	519	332	140	45	199
south of QEW)	74.3	40.0	10.2	38.3	10.9	49.0	13.4	10.1	6.9	5.1	11.4	4.4	10.6
P.D.22	3,781	844	2,235	883	650	236	2,679	5,997	3,747	2,405	827	307	1,132
(Mississauga	15,020	1,675	2,737	1,621	822	551	3,091	7,765	4,400	2,786	1,046	350	1,416
QEW to Hwy.401)	74.8	49.6	18.3	45.5	20.9	57.2	13.3	22.8	14.8	13.7	20.9	12.3	20.1
P.D.23	195	51	209	86	61	13	92	234	908	358	98	33	116
(Mississauga N.of	666	91	248	127	71	28	107	306	1,088	428	128	37	128
Hwy. 401)	70.7	44.0	15.7	32.3	14.1	53.6	14.0	23.5	16.5	16.4	23.4	10.8	9.4
P.D.24	1,307	320	1,359	555	394	85	623	1,492	3,178	2,640	725	270	799
(Brampton)	4,816	566	1,561	774	456	181	705	1,820	3,743	3,252	995	317	893
	72.9	43.5	12.9	28.3	13.6	53.0	11.6	18.0	15.1	18.8	27.1	14.8	10.5
P.D.25	1,308	219	485	247	195	80	891	1,384	719	483	206	71	288
(Oakville)	5,983	395	538	437	209	171	970	1,488	766	510	226	75	315
	78.278.1	44.6	9.9	43.5	6.7	53.2	8.1	7.0	6.1	5.3	8.9	5.3	8.6
P.D.26	572	112	398	162	105	33	215	516	643	464	134	51	202
(Milton)	1,405	139	403	200	105	47	217	522	646	467	153	54	201
	59.3	27.6	1.2	19.0	0.0	29.8	0.9	1.02	0.5	0.6	0.0	5.6	0.5

Source: Metro Travel Demand Model, 2011 Base Case, GO-ALRT 'A'

Key: 852 - Auto person trips
3311 - Total person trips
74.2 - percentage transit modal split

EXHIBIT 6.4

GO TRAIN RIDERSHIP FORECASTS
(2011 A.M. PEAK HOUR)[1]

	Lakeshore	Milton	Georgetown
Basic GO Train model forecast	10,080	7,656	2,792
Re-assignment from Bloor Subway	1,501	4,671	1,796
Adjustment of modal split	231	672	307
New Forecast	11,812	12,999	4,895

1. Metro Travel Demand Model, GO-ALRT 'A' Base Case

EXHIBIT 6.5

COMPARISON FORECAST OF TRANSIT MODAL SPLIT (BASE CASE) TO ETOBICOKE FROM THE EAST (METRO) AND THE WEST (PEEL, EAST HALTON)

FROM	TO: P.D.7 South Etobicoke	P.D.8 Central Etobicoke	P.D.9 North Etobicoke
<u>The East</u>			
P.D.3	23.4	35.0	30.6
P.D.4	26.6	38.5	25.0
P.D.5	18.2	32.9	18.2
P.D.10 Rest of Metro	17.3	25.4	34.4
P.D.11	19.5	27.7	27.8
P.D.12	20.0	25.0	22.2
P.D.13-16	25.8	39.8	18.4
Unweighted average of above	21.5	32.0	25.2
<u>The West</u>			
P.D.21	13.2	10.3	6.6
P.D.22 Mississauga	13.4	22.8	14.8
P.D.23	13.1	22.9	16.8
P.D.24 - Brampton	12.6	17.7	15.2
P.D.25 - Oakville	8.2	7.0	6.3
P.D.26 - Milton	0.9	1.0	0.3
Unweighted average from P.D.21-26	10.2	13.6	10.0

Note:

P.D.1,2 and 6 were not included in the table as they have a Bloor subway connection to Etobicoke, which would not allow a fair comparison of forecast modal split from the east and west into Etobicoke.

The original model forecast for 2011 a.m. peak hour person travel across the boundary using GO-ALRT 'A' land use is as follows:

Auto	70,500 (66%)
Municipal transit	16,200 (15%)
GO Rail	20,500 (19%)
Total	107,200

Applying the modal split adjustments discussed above, produces a revised modal split as follows:

Auto	64,490 (60%)
Municipal transit	13,032 (12%)
GO Rail	29,678 (28%)
Total	107,200

Applying these revised modal split percentages to the M1-85 and Peel 2011 base case forecasts gives revised figures as follows:

	M1-85	Peel
Auto	57,420	48,240
Municipal transit	11,484	9,648
GO Rail	26,796	22,512
Total	95,700	80,400

When trucks are added to the auto forecast, the vehicle assignment in all cases would be higher than the reasonably expected future road capacity of 52,515. However, there is potentially a much higher surface transit capacity than the municipal transit passenger forecast of between 9,648 and 13,032. Depending on the frequency of buses and the number of roadways considered for high frequency bus services, there could be a potential bus capacity at the boundary of between 15,000 and 20,000 passengers per hour. A further forced modal split would therefore be possible to reduce further the high auto demand if such a dense bus network, with fare and service integration in place, were provided. Again, it should be mentioned that only a dense grid of transit services would likely be successfull in encouraging a significant shift to transit usage due to the spread of both origins and destinations.

The analysis discussed in this section, while rudimentary in nature, indicates generally the effect of the three main proposals in the report, namely, incremental expansion of GO Rail services, introduction of selective fare and service integration and implementation of improved municipal cross-boundary transit services. Based on these preliminary investigations, it would appear such policies have a chance of coping with the 2011 forecast demand for either the Region of Peel modified GO-ALRT 'A' land-use, or the new Metro land-use (M1-85). However, the extremely high travel demand forecasts for Screenline 1 using the Network 2011 (GO-ALRT 'A') land-use scenario would need either an extraordinarly high transit modal split to the major destinations (e.g. 84% to P.D.1, 35-50% to Etobicoke) or a major widening of the QEW to cope with the forecast demand. As previously mentioned, it is not considered appropriate to develop plans on the basis of a questionably high forecast that is open to much debate. In any case, a high capacity transit proposal or major road widening in this southern section of the boundary would have major property impacts, as no right-of-way is readily available. Another possible conclusion to be drawn is that the transportation system in the southern section of the West Metro boundary could not support the land use forecast for the GO-ALRT 'A' scenario.

6.3 Short-term solutions

In that the immediate pressure on boundary roads is between Dundas and the Lake, any short term solutions must be aimed at this section of the boundary.

The Mississauga Transportation Study recommended the widening of the Queensway to 6 lanes in Mississauga, to be carried out in the next five years. This improvement should be supported. GO Transit are introducing 3 extra peak period trains in the next two years on the Milton and Lakeshore West lines. These service improvements will have a positive effect in encouraging greater transit usage to downtown destinations.

Section 4 illustrated how commuters from the west with destinations in Etobicoke (particularly south Etobicoke) are contributing up to 50% of the demand on the road system across Screenline 1. Fare integration between GO Transit, Mississauga Transit and T.T.C. would offer a much more attractive transit service for cross-boundary commuters. At present, these commuters are penalized for short distance trips by having to pay two transit fares and possibly having to change service several times. A revamping of Mississauga transit and possibly T.T.C. services to serve the south Etobicoke employment areas more directly, could (with fare integration) have a major impact by reducing the amount of auto travel across this south section of the boundary.

The solutions that would appear to have the most promise to alleviate short term problems include:

- widening of the Queensway to 6 lanes in Mississauga;
- consideration of new cross-boundary transit services to serve the high employment areas of Rexdale and south Etobicoke;
- fare and service integration at Union Station and at certain other GO Stations in Metro.
- consideration of new GO Bus service from Mississauga City Centre to North York.
- further investigation of transit routes worthy of operational testing (e.g. Mississauga City Centre to Eglinton West or Kipling subway stations)

The above short term transit initiatives form part of the total package suggested for long term improvements. They also tend to need little initial capital outlay, so there is no element of 'gambling' with large capital investments. The strategy allows operational testing of future capital

intiatives and a monitoring of their relative failure or success, which then allows for refinements to be made and possible new solutions to be initated without any major capital being expended in the first instance.

6.4 RECOMMENDED STRATEGY

It was stated earlier that the uncertainty of long term forecasts puts into question the timing of need for implementation of both road and transit improvements. However, the improvements identified as having the best chance of positively addressing the forecast travel demand are generally the ones that can be applied incrementally, thus alleviating long term risk. Expansion of GO Rail services can be carried out incrementally as demand arises, although there will be large capital requirements (currently unknown) by the Province as certain levels of service are reached. Municipal transit improvements can also be carried out incrementally. Short term road improvements have been identified with the ordering of improvements/additions elsewhere left open, assuming that these improvements will be undertaken after the need becomes apparent.

In view of the uncertainty connected with both the level and timing of future demand (rate of development) and supply (GO Rail) it is felt that rather than making firm recommendations for the implementation of road and transit initiatives over the next 25 years, the best approach in this situation is to adopt a strategy that is responsive to the developing situation. Having identified the nature of the demand across the boundary and the initiatives which best address the travel desire, a responsive approach would entail incremental application of these improvements to roadways and transit services. This approach allows monitoring, testing, and initiation of a formal review process to be carried out without investing large amounts of money until the need becomes more apparent. The recommended strategy to address commuting pressures across the West Metro boundary is described as follows:

Recommended Strategy

1. Implementation of incremental road improvements across the boundary as demand requires, but not in advance of need if transit initiatives are to be successful.

2. Encouragement to Peel and M.T.C. to improve the road system in Peel to divert trips from crossing the boundary (e.g. Highway 401/Airport connection, Highway 407), or to divert trips away from the southern part of the boundary to roads further north (e.g. improve north-south roadways within Mississauga).

3. Introduction of incremental and continuous improvements in western GO Rail services (particularly the Milton line) to serve the increasing travel demand for downtown destinations, including fare integration at Union Station to make the service more attractive for commuters with convenient access to the subway system beyond Union Station. Major capital investments should be reviewed in the context of alternative rapid transit opportunities.

4. Identification of transit markets for the implementation of additional GO and Municipal bus services (e.g. South Etobicoke, Airport, Rexdale, Downsview, North York, etc.).

5. Introduction of fare and service integration among GO Transit, the T.T.C., Mississauga Transit and Brampton Transit for cross boundary transit travel to arrive at a more equitable transit fare structure, improved grid of transit services and more direct routing, all of which would encourage a shift from auto to transit usage.

6. Protection of corridors for future rapid transit facilities including the E.W.R.T. and the Mississauga City Centre to Kipling Station busway connection, and operational testing of improved bus services to more

accurately assess the potential demand and timing of implementation of such initiatives.

7. Initiation of an ongoing review process, including monitoring of population and employment growth, travel demand, (e.g. cordon counts, census surveys), assessment of the success of initiatives, fine tuning/modification, review of forecasts, etc. The results of this on-going review would be incorporated in the five-year review program proposed for the Network 2011 strategy.

The strategy described above is felt to be a responsible approach to the uncertainty of the future commuting situation. The approach is one that does not require large initial capital investment and, at the same time, contains specific proposals that have an excellent chance of coping with the increase in travel demand for many years to come.

It is important to note that this strategy is dependent on a commitment by the current and future Provincial Governments to improve GO Transit services and to co-ordinate the implementation of the fare and service integration initiatives described above. If this proves not to be the case, or if capital and operating costs become prohibitive, future reviews of West Metro boundary travel may conclude that the implementation of a new rapid transit facility is required.